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Culture's Effects on Corporate Sustainability Practices: A Multi-Domain and Multi-Level View

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ABSTRACT

With a triple-bottom-line lens on sustainability, this study examines the effects of culture on companies' economic, social, and environmental sustainability practices. Drawing on institutional theory and project GLOBE, we delineate cultural practices dimensions that consistently predict sustainability practices related to each of the three domains. Based on a sample of 1924 companies in 36 countries and nine cultural clusters, we find that future orientation, gender egalitarianism, uncertainty avoidance, and power distance practices positively, and performance orientation practices negatively, predict corporate sustainability practices. Further, our findings suggest that these effects might vary according to the country vis-à-vis cluster level of analysis.

1. Introduction

What role does culture play in determining corporate sustainability practices? A growing number of scholars are examining its influence on sustainability and related concepts such as corporate social responsibility (CSR) (Waldman et al., 2006) and firms' CSR commitment (Peng, Dashdeleg, & Chih, 2014), as well as corporate social (Ho, Wang, & Vitell, 2012) and environmental (Husted, 2005) performance. However, research in this area is fraught with two important challenges, limiting a comprehensive theoretical understanding of how cultural characteristics may influence sustainability.

First, the multi-domain and complex character of the sustainability concept (e.g., Dyllick & Hockerts, 2002; Hahn, Pinkse, Preuss, & Figge, 2015; Van Marrewijk & Werre, 2003; Whiteman, Walker, & Perego, 2013) has led to varying assumptions about the very nature of sustainability. While in the past trade-offs between the economic, social, and environmental domains of sustainability were a dominant theme (Hahn, Figge, Pinkse, & Preuss, 2010), more recent scholarship acknowledges the interdependence of these three areas, often subsumed under the triple-bottom-line (TBL) framework (Elkington, 1997). Moreover, there is increasing attention to external social, political, and economic influences (Hahn et al., 2015; Orlitzky & Erakovic, 2012) that make these interrelationships dynamic. Consequently, scholars have emphasized an integrative perspective (Gao & Bansal, 2013) on economic, social, and environmental aspects of sustainability with regard to managers' and firms' embeddedness in a wider systemic context.

Second, the notion of culture is equally complex and can have various types of effects on sustainability (Caprar & Neville, 2012), depending on the conceptualization of the interlinkages between formal institutions such as political, judicial, and economic rules and regulations, and informal institutions such as culture (North, 1990). However, with respect to sustainability, research has mostly focused on formal institutions, with less attention paid to informal institutional influences like culture (Peng et al., 2014). Even though culture has been acknowledged as a significant contextual stimulus (Caprar & Neville, 2012; Witt & Stahl, 2016), little is known about its role in shaping corporate sustainability practices. Aguinis and Glavas (2012) consider the linkages between institutional-level predictors like culture and sustainability-related outcomes as a 'black box', and Ralston et al. (2015, p. 168) contend that "we still have much to learn to fully understand the dynamics of the triple-bottom-line of CR [corporate responsibility] across cultures". In addition, the role of culture can be interpreted differently according to country boundaries and groups of multiple countries (Peterson & Søndergaard, 2014). In particular, increasing evidence suggests that a sole focus on country as the predominant level of analysis for culture might not be fully appropriate (Caprar, Devinney, Kirkman, & Caligiuri, 2015).

In the light of these two issues, we aim to address the gap of how culture influences companies' sustainability practices. In what follows, we review the extant literature on the interlinkages between different cultural facets and various conceptualizations of sustainability. We then draw on institutional theory and project GLOBE (House, Hanges, Javidan, Dorfman, & Gupta, 2004) to delineate cultural practices dimensions that can consistently predict economic, social, and

Table 1
Overview of studies testing culture's effects on sustainability.

Author(s), journal	Culture framework	Theoretical basis and foundations	Sustainability-related conceptualization (DV)	Findings related to culture
Alas (2006), JBE	GLOBE (practices and values)	Ethical theory	Ethical values (e.g., standard of living, solidarity, social equality)	• ASV − (practices), + (values) • FUT − (practices), + (values) • GEN − (practices), + (values) • HOR + • ING − • ISC − • POR + • POW + • UNA − (practices), + (values)
Arnold et al. (2007), JBE	Hofstede		Judgements of ethics scenarios (e.g., stakeholder accountability, integrity)	• IDV − • MAS +/− • POW +/− • UNA +/−
Beekun et al. (2008), JBE	Hofstede	Ethical theories (justice, utilitarianism, relativism, egoism)	Judgements of ethics scenarios (degree of unethicality)	• IDV + • POW −
Cai et al. (2016), JCF	Hofstede Schwartz		Corporate social performance (environmental, social, governance)	Hofstede: • POW − and − non-sig. Schwartz: • Harmony + • Egalitarianism + and + non-sig. • Intellectual autonomy + • Affective autonomy +
Gallego-Álvarez and Ortas (2017), IBR	Hofstede	Stakeholder theory	Corporate environmental sustainability reporting	• IDV +/− non-sig. • IND − and − non-sig. • MAS − • POW − • PRA + • UNA +
Hartmann and Uhlenbruck (2015), JWB	Hofstede	Varieties of capitalism	Corporate environmental performance (emission reeducation, product innovation, resource reeducation)	• IDV + and +/− non-sig. • MAS +/− non-sig. • POW + and +/− non-sig. • UNA + non-sig.
Haxhi and van Ees (2010), JIBS	Hofstede	Institutional theory	Diffusion of codes of good governance (issuance and identity of issuers)	• IDV + and +/− non-sig. • MAS +/− non-sig. • POW +/− and +/− non-sig. • UNA − and +/− non-sig.
Ho et al. (2012), JBE	Hofstede		Corporate social performance (environmental, strategic governance, labor relations, stakeholder management)	• IDV − • MAS + • POW + • UNA +
Husted (2005), MIR	Hofstede		Environmental sustainability	• IDV + • MAS − • POW − • UNA + non-sig.
Ioannou and Serafeim (2012), JIBS	Hofstede	National business systems institutional framework	Corporate social performance (environmental and social)	• IDV + and + non-sig. • POW+
Parboteeah et al. (2012), JBE	GLOBE (practices)		Propensity to support sustainability initiatives	• ASV − • FUT + • HOR + • ISC + • POR − • UNA − non-sig.
Park et al. (2007), JEF	Hofstede		Environmental sustainability	• IDV + and +/− non-sig. • MAS − • POW +/− • UNA + non-sig.
Peng et al. (2014), JMM	Hofstede	Institution-based view (informal institutions)	Firm's CSR commitment (sustainability)	• IDV + • MAS − • POW − • UNA +
Ringov and Zollo (2007), CG	Hofstede GLOBE (values)		Corporate social and environmental performance	Hofstede: • IDV +/− non-sig. • MAS − • POW − • UNA + non-sig. GLOBE: • GEN + • ING − non-sig. • POW − • UNA + non-sig.

Table 1 (*continued*)

Author(s), journal	Culture framework	Theoretical basis and foundations	Sustainability-related conceptualization (DV)	Findings related to culture
Roy and Goll (2014), IBR	GLOBE (practices)	Institutional theory	Sustainability: environmental sustainability, social sustainability (human development), economic sustainability (avoidance of corruption)	• Performance based culture $+/-$ and $+$ non-sig. • Socially supportive culture $-$ and $+/-$ non-sig. • Gender egalitarianism culture $+$ and $+/-$ non-sig.
Scholtens and Dam (2007), JBE	Hofstede		Ethical policies of firms (human rights, ethics system, ethics communications, ethics implementation, corruption)	• IDV $+$ and $+$ non-sig. • MAS $-$ and $-$ non-sig. • POW $-$ and $+/-$ non-sig. • UNA $+$ and $+$ non-sig.
Thanetsunthorn (2015), AJBE	Hofstede		Firm's CSR (employee-related, community-related, environment-related)	• IDV $-$ • MAS $-$ and $+/-$ non-sig. • POW $-$ • UNA $+$ and $+$ non-sig.
Vachon (2010), SD	Hofstede		Environmental practices by corporations (green corporatism, environmental innovation)	• IDV $+$ and $-$ non-sig. • MAS $-$ non-sig. • POW $-$ and $-$ non-sig. • UNA $-$
Waldman et al. (2006), JIBS	GLOBE (values)	Stakeholder theory	CSR, composed of concern for: (1) shareholder/owners (2) stakeholders (3) community/state welfare	• ING $+/-$ non-sig. • ISC $+$ • POW $-$
Williams and Zinkin (2008), BEER	Hofstede		Stakeholders' propensity to punish irresponsible corporate behavior	• IDV $+$ • LTO $-$ • MAS $+$ • POW $-$ • UNA $-$ non-sig. (qual.)
Winterich and Zhang (2014), JCR	Hofstede		Charitable behavior (giving money, giving time, helping a stranger)	• IDV $+$ non-sig. • LTO $-$ • MAS $-$ and $-$ non-sig. • POW $-$ and $+$ non-sig. • UNA $+$ non-sig.
Witt and Stahl (2016), JBE	GLOBE (practices)	Varieties of capitalism	Responsibility orientations of senior executives (attitudes toward different stakeholders)	• ISC $+/-$ (qual.) • HOR $+/-$ (qual.) • POW $+/-$ (qual.)

Notes: ASV assertivenes, FUT future orientation, GEN gender egalitarianism, HOR humane orientation, IDV individualism, IND indulgence, ING in-group collectivism, ISC institutional collectivism, LTO long-term orientation, MAS masculinity/femininity, POR performance orientation, POW power distance, PRA pragmatism, UNA uncertainty avoidance, $+$ significant positive effect, $-$ significant negative effect, $+/-$ both significant positive and significant negative effects (e.g., effect tested in more than one model, more than one DV), $+$ non-sig. non-significant positive effect, $-$ non-sig. non-significant negative effect, $+/-$ non-sig. both non-significant positive and non-significant negative effects (e.g., effect tested in more than one model, more than one DV), (qual.) qualitative/interpretation.

environmental sustainability practices, and are thus relevant when viewing sustainability from a TBL perspective. Additionally, we shed light on the above relationships beyond country borders by considering cultural clusters. We test our hypotheses on a sample of 1924 companies. Our intended contribution is two-fold. First, with a TBL lens on sustainability rather than a focus on selected aspects of sustainability, we delineate cultural practices dimensions that consistently influence companies' economic, social, and environmental sustainability practices. Second, we suggest that the impact of culture on corporate sustainability practices may vary depending on the level of analysis at which those practices are considered, underlining the importance of conceptualizations of culture at levels of analysis other than country.

2. Theory and hypotheses

2.1. The concept of sustainability and sustainability practices

In recent years, corporate sustainability has received increasing attention (e.g., Amini & Bienstock, 2014; Berns et al., 2009; Hopkins, 2009), but has been conceptualized in varied ways (Bansal & Song, 2016). It has been associated with other similar concepts such as corporate social responsibility, business ethics, corporate moral agency, corporate citizenship, corporate accountability, strategic philanthropy, stakeholder management, and social entrepreneurship (e.g., Bansal & Song, 2016; Carroll, 2015; Matten & Moon, 2004; Van Marrewijk & Werre, 2003; Willard, 2002).

A commonly applied framework to conceptualize the various

aspects related to sustainability is the TBL concept (Bansal & DesJardine, 2014), which relates to the simultaneous pursuit of economic prosperity, social justice, and environmental integrity (Elkington, 1997). According to the TBL logic, the essence of corporate sustainability is to achieve financial, social, and environmental objectives in an integrated and positively-reinforcing manner (Elkington, 1997; Gao & Bansal, 2013; Orlitzky & Erakovic, 2012). Drawing on these considerations, we define corporate sustainability practices as companies' activities that contribute to the economic, social, and environmental domains of sustainability by meeting stakeholders' needs in the present without compromising the requirements of future generations (Carroll & Buchholtz, 2014; Svensson, Wood, & Callaghan, 2010). The three domains can be described and defined (Bansal, 2005; Elkington, 1997; Orlitzky & Erakovic, 2012) in the following way: The *economic domain* refers to the financial bottom-line under the consideration of creating long-term economic prosperity through efficient use of resources and the productive capacity of organizations. The *social domain* reflects a company's impact on social justice in terms of knowledge, skills, motivation, and loyalty of employees, as well as its social impact on and trust of its business partners, communities, and society as a whole. The *environmental domain* refers to a company's ecological integrity and its efforts to reduce the size of its environmental footprint.

The interrelationships between the three sustainability domains and related practices, due to external social, political, economic, and environmental pressures (Elkington, 1997) tend to be dynamic and in constant flux (Orlitzky & Erakovic, 2012), reflecting the holistic,

integrative nature of corporate sustainability (Gao & Bansal, 2013). The holistic character of sustainability relates to economic, social, and environmental concerns at different levels: individual, organizational, and systemic. Consequently, the embeddedness of managers in firms and firms' operations in a wider systemic context (cf., Granovetter, 1985) influence corporate sustainability. The integrative view on sustainability suggests that managers and companies embrace tensions between the three sustainability domains instead of eliminating them, without emphasizing one domain over another (Hahn et al., 2015).

2.2. Culture's influence on sustainability

According to Caprar and Neville (2012, p. 236), "culture is the antecedent, or the condition, influencing the adoption of sustainability". Several other studies identify culture as an important explanatory variable in terms of sustainability-related variations (e.g., Beekun, Hamdy, Westerman, & HassabElnaby, 2008; Haxhi & van Ees, 2010; Parboteeah, Addae, & Cullen, 2012; Ringov & Zollo, 2007; Waldman et al., 2006). For instance, Ioannou and Serafeim (2012) have found that cultural traits play a significant role in explaining CSR variation across firms. Similarly, in the context of consumer attitudes to corporate responsibility, various studies suggest culture-related differences across countries (e.g., Szőcs, Schlegelmilch, Rusch, & Shamma, 2016; Williams & Zinkin, 2008). Table 1 presents an overview of key studies examining how culture affects corporate sustainability and related concepts.

While this body of research clearly emphasizes the importance of culture in predicting corporate sustainability and associated aspects, empirical findings reveal considerably mixed effects. For instance, Hofstede's power distance dimension was found to have positive (e.g., Ho et al., 2012; Ioannou & Serafeim, 2012) and negative (e.g., Ringov & Zollo, 2007) effects on sustainability, which was conceptualized in various ways, such as corporate social performance, corporate concern for different stakeholders, or charitable behavior. Similarly, inconsistencies have been found regarding the effects of masculinity/femininity and uncertainty avoidance (cf., Arnold, Bernardi, Neidermeyer, & Schmee, 2007; Haxhi & van Ees, 2010; Scholtens & Dam,2007). These discrepancies may be explained by the different conceptualizations of sustainability, which often reflect only a fraction of its TBL character, by focusing, for example, only on social or environmental aspects (e.g., Husted, 2005). In this regard, Kolk (2016), examining social-responsibility issues across fifty years of the international business literature, shows that the environmental domain particularly has gained ground within sustainability. However, with regard to cultural antecedents it is notable that the economic compared to the social and environmental sustainability domains has been neglected. Instead, some studies focus on ethical components related to a rather broad notion of sustainability (e.g., Arnold et al., 2007; Beekun et al., 2008; Scholtens & Dam, 2007). In addition, several of these studies are based on respondents' perceptions, values, propensities, and judgements of sustainability, which do not necessarily translate into corporate action (cf., Caprar & Neville, 2012).

In terms of conceptualizations of culture, most studies (e.g., Arnold et al., 2007; Haxhi & van Ees, 2010; Ho et al., 2012; Husted, 2005) use Hofstede's (1980) original four culture dimensions (individualism, masculinity/femininity, power distance, and uncertainty avoidance). In recent years, project GLOBE (House et al., 2004) has been adopted as well (e.g., Alas, 2006; Parboteeah et al., 2012; Ringov & Zollo, 2007; Roy & Goll, 2014; Waldman et al., 2006). While Hofstede's framework dominates quantitative culture research in international business and management and represents a relevant source for comparative culture research (cf., Beugelsdijk, Maseland, & van Hoorn, 2015), project GLOBE, due to its distinction between cultural values and cultural practices, provides novel opportunities for investigating culture's impact on corporate sustainability practices. Moreover, further cultural characteristics such as future orientation and performance orientation,

as suggested by project GLOBE, may be particularly relevant with regard to sustainability. For example, future orientation, by emphasizing the long-term perspective, is relevant to the core notion of the sustainability concept.

In addition to the discrepancies in terms of conceptualizing both sustainability and culture, studies tend to lack theoretical grounding in explaining how culture affects sustainability, with only a few specifically adopting institutional theory, stakeholder theory or ethics-related approaches (e.g., Beekun et al., 2008; Haxhi & van Ees, 2010; Peng et al., 2014; Waldman et al., 2006). While a focus on ethics frequently relates to the normative aspects associated with culture and sustainability (cf., Beekun et al., 2008), stakeholder approaches help to understand culture's effects on sustainability within a framework of managerial decision-making and competing stakeholder claims (Roy & Goll, 2014; Waldman et al., 2006). In contrast, institutional theory allows for comparative examination of culture's effects on companies' sustainability practices, as it assumes that corporations are embedded in a nexus of formal and informal institutions, including culture (North, 1990), that directly influence their activities (McGuinness & Demirbag, 2012). We therefore draw on institutional theory to systematically delineate the effects of culture on companies' sustainability practices, viewed through a TBL lens of economic, social, and environmental sustainability.

2.3. Institutional theory

Institutional theory assumes social structures within which organizations operate and which facilitate or constrain organizational activity (Scott, 2001). Institutional influences may affect the behavior of firms in the form of rules, laws, and sanctions, but also in the form of shared conceptions of social reality (McGuinness & Demirbag, 2012). Correspondingly, a large body of international business and management research (e.g., Deephouse, Newburry, & Soleimani, 2016; Hearn, 2015; Meyer, Mudambi, & Narula, 2011) has distinguished formal from informal institutions. Formal institutions include rules and organized structures to guide human and organizational action, such as laws and regulations (Peng, Wang, & Jiang, 2008), whereas informal institutions relate to the normative and cultural-cognitive pressures (DiMaggio & Powell, 1983; Scott, 2001) that guide social behavior. Accordingly, in international business and management research, culture is frequently considered an informal institutional element (e.g., Dikova, Sahib, & van Witteloostuijn, 2010; Peng et al., 2008; Redding, 2005). Scott (2001, p. 57) specifically addresses the cultural-cognitive pillar of institutions as "…the shared conceptions that constitute the nature of social reality and the frames through which meaning is made". Consequently, routines are followed because they are taken for granted as the way things *are done*.

An important underlying mechanism of institutional theory is legitimacy, which is "a condition reflecting perceived consonance with relevant rules and laws, normative support, or alignment with cultural-cognitive frameworks" (Scott, 2001, p. 59). Firms seek legitimacy for a well-grounded reason: Those that are considered legitimate by the collective will prosper, whereas businesses that do not adhere to relevant characteristics will not (Dickson, BeShears, & Gupta, 2004; DiMaggio & Powell, 1983). In this regard, isomorphism represents a primary way for companies to achieve legitimacy, as it implies that "organizations are pressured to become isomorphic with, or conform to, a set of institutionalized beliefs and processes" (Dickson et al., 2004, p. 82). Scott (2001, p. 61) claims that the cultural-cognitive mode of legitimacy is the "… "deepest" level because it rests on preconscious, taken-for granted understandings". In particular, the cultural-cognitive pillar of institutions elicits a culturally-supported base of legitimacy (Scott, 2001), which aligns with the notion that it is difficult to fully override the cultural norms that exist within a particular country or society (Dickson et al., 2004). Related to sustainability, this means that in order to gain legitimacy, firms engage in sustainability practices in

accordance with established, shared cultural practices (cf., Roy & Goll, 2014).

2.4. Culture framework: project GLOBE

We adopt the GLOBE culture dimensions (House et al., 2004) as our foundational culture framework. Based on data from more than 17,000 managers in over 900 organizations, project GLOBE identified nine culture dimensions, allowing for comparisons between 62 countries around the world.

A key aspect of project GLOBE relevant for our purposes is its distinction between cultural values and practices: Whereas the former relate to how things *should be* done, the latter refer to how things *are* done. This distinction is an important feature in favor of project GLOBE as our foundational culture framework. We note that while previous research has identified a close linkage between attitudes and behaviors related to sustainability practices (Cordano & Frieze, 2000), valuing sustainability does not automatically translate into practicing sustainability (Caprar & Neville, 2012). Cultural values may be considered antecedents of cultural practices, since they precede behavior (Egri et al., 2012). Consequently, there appears to be an essential discrepancy between values and practices that needs to be considered when delineating the influence of culture on corporate sustainability practices, where cultural practices may be a better indicator of sustainability practices (Roy & Goll, 2014). We therefore focus on the GLOBE cultural practices dimensions.

In addition to and bearing in mind the informal nature of culture as ascribed by institutional theory, we only focus on those GLOBE cultural practices dimensions that conceptually clearly align with the notion of informal institutions. Thus, we exclude cultural practices dimensions that by definition interlink with formal types of institutions. Moreover, in view of the TBL perspective on sustainability, we consider relevant those GLOBE dimensions for which conceptually consistent linkages to each of the three sustainability domains – economic, social, and environmental – can be established. Hence, we develop hypotheses for the effects of five GLOBE cultural practices dimensions on corporate sustainability practices: *future orientation, gender egalitarianism, uncertainty avoidance, power distance,* and *performance orientation.* Drawing on institutional theory, the overarching theoretical mechanism is that in order to gain legitimacy (DiMaggio & Powell, 1983), firms adopt sustainability practices in accordance with these cultural characteristics, which constitute a culturally-supported base of legitimacy (Scott, 2001).

As described in Appendix A, Supplementary material, the remaining four GLOBE cultural practices dimensions – *humane orientation, institutional collectivism, in-group collectivism,* and *assertiveness* – conceptually overlap with formal institutions and/or theoretically do not allow for deriving hypotheses with regard to how they consistently affect each of the three sustainability domains.

2.4.1. Future orientation

Future orientation is defined as "the degree to which a collectivity encourages and rewards future-oriented behaviors such as planning and delaying gratification" (Ashkanasy, Gupta, Mayfield, & Trevor-Roberts, 2004, p. 282). Future-oriented cultures are more likely to place a higher priority on long-term success, long-term strategic orientations, and flexible, adaptive managers. Greater future orientation practices have been associated with economic prosperity and societal health (Ashkanasy et al., 2004).

Within a longer-term perspective, perceived trade-offs between the three sustainability domains are less likely (cf., Miska, Hilbe, & Mayer, 2014), which suggests that future orientation practices positively affect economic, social, and environmental sustainability practices. In support of this argument, Parboteeah et al. (2012) found empirical confirmation for positive effects of future orientation practices on the propensity to support sustainability initiatives.

With regard to economic sustainability practices, Ioannou and Serafeim (2012) point to the debate over whether markets are myopic – i.e., short-term-oriented – or whether they are for some activities long-term-oriented. In support of future orientation, Ortiz-de-Mandojana and Bansal (2016) show that firms that engage in sustainable longer-term practices have lower financial volatility, higher sales growth, and higher chances of survival. This corresponds to Ashkanasy et al.'s (2004) characterization of cultures with higher future orientation as considering materialistic achievement and spiritual fulfillment to be integrated and placing a higher priority on long-term success, and it aligns with the notion of sustainability within the economic domain. It is therefore likely that companies in cultures with greater future orientation practices are more likely to engage in economic sustainability practices.

Regarding social sustainability practices, an important aspect is that sustainability "emphasizes the long-term nature of the benefit that business is expected to provide to society" (Schwartz & Carroll, 2008, p. 163). This is because sustainability aims at inter-generational equity (Bansal & Song, 2016), and in this sense the needs of present generations should not compromise those of future generations (Bansal & DesJardine, 2014; DesJardins, 2016). This aligns with cultures characterized by greater future orientation practices, where long-term success is valued and where organizations have longer strategic orientation. Therefore, companies in these cultures are more likely to engage in social sustainability practices, which contribute to ensuring social justice, positive social impact, and trust among stakeholders and society in the long run. Therefore, companies in future-orientation cultures are more likely to engage in social sustainability practices.

As for environmental sustainability practices, the ecological aspects of sustainability are frequently associated with longer-term and even lengthy time frames (e.g., Egri & Herman, 2000; Starik & Rands,1995). Comparably, Parboteeah et al. (2012) remark that environmental sustainability is implicitly long-term-oriented and that future-oriented cultures are more amendable to planning and implementing environmental sustainability programs. This corresponds to companies in cultures with greater future orientation practices, which due to their longer-term strategic positioning are more likely to sacrifice immediate benefits for environmental integrity in the future. Thus, companies in these cultures aim toward ecological preservation, which is reflected in higher degrees of environmental sustainability practices.

Collectively, companies in cultures with greater future orientation practices are likely to apply, as relevant from a TBL perspective, longer-term, integrative strategic orientations with regard to economic, social, and environmental sustainability practices. Based on this discussion, we hypothesize:

H1. Companies in cultures characterized by greater future orientation practices exhibit a higher degree of (a) economic sustainability practices, (b) social sustainability practices, and (c) environmental sustainability practices.

2.4.2. Gender egalitarianism

Gender egalitarianism "reflects societies' beliefs about whether members' biological sex should determine the roles that they play in their homes, business organizations, and communities" (Emrich, Denmark, & Den Hartog, 2004, p. 347). Cultures with greater gender egalitarianism rely less on biological sex to determine the allocation of roles between the sexes, and seek to minimize gender-role differences. Greater gender egalitarianism practices tend to be associated with greater human development (Emrich et al., 2004).

While studies that link gender egalitarianism practices to sustainability are relatively scarce (e.g., Alas, 2006; Ringov & Zollo, 2007; Roy & Goll, 2014), Quigley, Sully de Luque, and House (2005) argue that cultures high and low in gender egalitarianism might differ with regard to sustainability. This mirrors the positive effect of gender egalitarianism on social and environmental performance that Ringov and Zollo

(2007) found, and it reflects the positive linkages to human development and environmental performance that Roy and Goll (2014) identified.

As for economic sustainability practices, research on gender role differences suggests stereotypical gender roles that tend to apply across cultures, even if to varied extents (Costa, Terracciano, & McCrae, 2001; Williams & Best, 1994), i.e. the female "communal" and the male "agentic" gender roles (Bakan, 1966). Whereas communality is a tendency toward mutuality, interdependence, and the suppression of self-interest in favor of group welfare, agency implies self-assertion and self-expansion. The former aligns with the notion of sustainability within the economic domain and the productive capacities of companies; the latter contrasts with this perspective due to its self-centered, assertive, and instrumental focus (cf., Emrich et al., 2004). In cultures with greater gender egalitarianism practices, it is less likely that stereotypical gender roles are favored, because gender role differences are aimed to be minimized. Consequently, the reduction of stereotypical gender roles generates a more egalitarian climate in which traditional patriarchal patterns are replaced by greater female participation (Segall, Dasen, Berry, & Poortinga, 1990), and such conditions are often associated with higher economic development and modernization (Williams & Best, 1990). It is therefore likely that companies in cultures with greater gender egalitarianism practices de-emphasize agentic economic perspectives in favor of more communal approaches, resulting in higher degrees of economic sustainability practices.

Regarding social sustainability practices, gender egalitarianism practices have been associated with greater longevity, knowledge, and standards of living (Emrich et al., 2004), which are important aspects within the social domain of sustainability. In addition, Roy and Goll (2014) emphasize the corresponding concern for justice in these cultures, and Ringov and Zollo (2007) discuss how the role of business in society is fostered by high degrees of gender egalitarianism. Collectively, these attributes align with the notion of greater emphasis on the rights and freedoms of individuals in cultures with greater gender egalitarianism, as suggested by Quigley et al. (2005). This implies that for companies in these cultures the needs of a relatively broad set of stakeholders and constituencies are likely to be held relevant, which mirrors the previously discussed communal approaches. In this regard, Roy and Goll (2014) remark that higher gender egalitarianism fosters a structure of social relations in which division of labor is unaffected by gender. Therefore, the minimization of traditional gender roles in these cultures is likely to result in broader and more holistic perspectives with regard to companies' constituencies, thus leading to greater engagement in social sustainability practices.

With regard to environmental sustainability practices, previous research indicates that in lower gender-egalitarian cultures, material success and the pursuit of economic gain come at the expense of the environment (Husted, 2005; Tata & Prasad, 2015; Vachon, 2010). This corresponds to Roy and Goll's (2014) finding that gender egalitarianism positively influences environmental performance. As gender role differences tend to be minimized in cultures with greater gender egalitarianism practices, there is less likelihood that traditional stereotypical male gender roles focused on self-expansion, instrumentality, and agency are pertinent; such roles run against the logic of environmental sustainability, which aims to safeguard a company's ecological integrity and reduce its ecological footprint. In contrast, more communal approaches, as discussed previously as likely in cultures with greater gender egalitarianism due to their focus on communality and interdependence, will tend to make companies more sensitive and aware of aspects related to the environmental domain of sustainability. Therefore, companies in cultures characterized by greater gender egalitarianism practices are likely to show higher degrees of environmental sustainability practices.

Collectively, where cultures have greater gender egalitarianism practices, both men and women are less likely to be focused either on traditional "communal" or "agentic" roles, but instead embrace broader

perspectives with regard to sustainability and the TBL view. It is therefore likely that in companies in such cultures, the tendency to minimize stereotypical gender roles will translate into a more balanced engagement with economic, social, and environmental sustainability practices.

Based on this discussion, we hypothesize:

H2. Companies in cultures characterized by greater gender egalitarianism practices exhibit a higher degree of (a) economic sustainability practices, (b) social sustainability practices, and (c) environmental sustainability practices.

2.4.3. Uncertainty avoidance

Uncertainty avoidance is defined as "the extent to which ambiguous situations are threatening to individuals, to which rules and order are preferred, and to which uncertainty is tolerated in a society" (Sully de Luque & Javidan, 2004, p. 602). Cultures higher in uncertainty avoidance tend to formalize their interactions with others, show stronger desire to establish rules that facilitate the prediction of behavior, and take moderate risks. Greater uncertainty avoidance practices tend to be correlated with quality of life, human development, and general satisfaction (Sully de Luque & Javidan, 2004).

While some studies (e.g., Ho et al., 2012; Peng et al., 2014) identify positive effects of uncertainty avoidance on sustainability, others (e.g., Arnold et al., 2007; Parboteeah et al., 2012; Scholtens & Dam, 2007; Thanetsunthorn, 2015) have found rather mixed effects, with diverse reasoning about the underlying mechanisms. On the one hand, sustainability practices tend to be associated with high costs and uncertain benefits (Slawinski & Bansal, 2015), which may explain why companies in high uncertainty avoidance cultures might refrain from engaging in these activities, as they aim to take moderate risks. On the other hand, a positive relationship between uncertainty avoidance and companies' economic, social, and environmental sustainability practices is conceivable. In this regard, one of Vachon's (2010) perspectives supports the notion that high uncertainty avoidance results in companies' engagement in sustainability practices. The principal logic posits that the uncertainty associated with sustainability practices drives companies to structure their operating contexts with rules as well as formalized policies and procedures that help them alleviate the unpredictability of sustainability impacts (Parboteeah et al., 2012; Vachon, 2010) and thus avoid the associated uncertainties. Since high uncertainty avoidance implies lower tolerance for ignoring and breaking formal rubrics (Sully de Luque & Javidan, 2004), companies in these cultures are likely to adhere to established rules, procedures, and systems intended to evade the uncertainties associated with sustainability.

As for economic sustainability practices, policies aimed toward the reduction of uncertainty and the related formal rules can create higher economic dynamics and growth, compared to discretionary policies (Freytag & Renaud, 2007). In particular, the predictability that is created through uncertainty avoidance practices and adherence to formal rubrics can benefit companies' productive capacities, as it fosters a business environment beneficial for continued investment and entrepreneurial activity (Dervis, 2006; Venaik & Brewer, 2010). For instance, sustainability reporting can be seen as one way to create predictability of business success. Sustainability reporting has been found to have a negative impact on financial analysts' earnings forecast error, which in turn results in more efficient capital markets (Garrido-Miralles, Zorio-Grima, & García-Benau, 2016). This aligns with the notion of minimizing ambiguities related to economic sustainability. Consequently, in cultures characterized by greater uncertainty avoidance practices, companies tend to engage more in economic sustainability practices.

With regard to social sustainability practices, Quigley et al. (2005) point out that companies in high uncertainty avoidance cultures tend to consider all constituencies of a company important. Negligence in any constituencies might result in uncertain consequences for companies,

which established rules aim to avoid. It is therefore likely that formal procedures and rubrics extend to employees, communities, business partners, and society as a whole, thereby encompassing the social domain of sustainability. In this regard, uncertainty avoidance has been related to ethical policies in the case of human rights and community development (Scholtens & Dam, 2007; Thanetsunthorn, 2015). These associations support the notion that in cultures characterized by greater uncertainty avoidance practices, companies are likely to show higher degrees of social sustainability practices.

Related to environmental sustainability practices, companies in cultures characterized by greater uncertainty avoidance practices are likely to put systems and procedures in place aimed to ensure environmental sustainability and to circumvent ambiguity and threats caused by environmental degradation (Parboteeah et al., 2012), such as the unknown ecological impact of pollution. In this regard, Thanetsunthorn (2015) suggests that the strict enforcement of environmental laws and regulations, common in cultures characterized by high uncertainty avoidance, may make companies more concerned about their environmental impacts. In addition, Peng et al. (2014) suggest that engagement in sustainability practices can help reduce the environmental uncertainties facing companies. Therefore, companies in cultures with greater uncertainty avoidance practices are more likely to engage in environmental sustainability practices.

Collectively, companies in cultures with greater uncertainty avoidance practices are likely to engage in economic, social, and environmental sustainability practices as relevant from a TBL perspective, because they adhere to established rules and procedures aimed to avoid unpredictability associated with the practices' impacts on the diverse constituencies of these companies. Based on this discussion, we hypothesize:

H3. Companies in cultures characterized by greater uncertainty avoidance practices exhibit a higher degree of (a) economic sustainability practices, (b) social sustainability practices, and (c) environmental sustainability practices.

2.4.4. Power distance

Power distance reflects "the extent to which a community accepts and endorses authority, power differences, and status privileges" (Carl, Gupta, & Javidan, 2004, p. 513). In cultures with high power distance, people tend to be differentiated into classes based on various criteria, power bases tend to be stable, and power is considered as providing social order, relational harmony, and stability. In such cultures, only few people have access to resources, capabilities, and skills. Accordingly, power distance practices were found to be negatively correlated with economic prosperity, competitiveness, and human development (Carl et al., 2004).

While some studies examining the relationship between power distance and sustainability-related concepts find negative effects (e.g., Husted, 2005), others find positive relationships (e.g., Ho et al., 2012; Ioannou & Serafeim, 2012). Husted (2005) argues that high levels of power distance and respect for authority lead to a weaker capacity for debate and limited responsiveness to sustainability issues. In contrast, Ioannou and Serafeim (2012) discuss how higher power distance may generate a sense of noble obligation on the part of those in power, leading to positive effects on corporate sustainability practices. In addition, power distance practices have been found to be correlated with self-protective behaviors (Carl et al., 2004), and thus give rise to self-centered and face-saving approaches (Javidan, Dorfman, Sully de Luque, & House, 2006). This implies that for those in power positions, engagement in sustainability practices can be a means to safeguard and maintain steady power relationships, which tend to be characteristic of cultures with higher power distance.

With regard to economic sustainability practices, in cultures characterized by greater power distance those in power positions are more likely to have greater flexibility and discretion in their decision making,

allowing for more far-reaching executive actions (cf., Crossland & Hambrick, 2011). In addition, investing in sustainability can incur costs and requires fiduciary obligations (Haugh & Talwar, 2010; Jaffe, Peterson, Portney, & Stavins, 1995). The attendant magnitude of responsibilities on the part of those in power positions as well as the self-protective and face-saving behaviors related to power distance practices require consideration of economic longevity and prosperity as well as the productive capacity of organizations, as relevant for economic sustainability. In contrast, jeopardizing economic sustainability has the potential to waver established power bases. Consequently, companies in cultures characterized by greater power distance practices are more likely to engage in economic sustainability practices.

As for social sustainability practices, Carl et al. (2004) suggest that cultures with greater power distance practices have a preference for more equitable distribution of power. Comparably, power distance has been associated with nobility in a society (Ioannou & Serafeim, 2012; Waldman et al., 2006) and thus with the assumption that those in charge look out for the needs of society or greater social purposes. Consistent with this is the notion of the 'license to operate', often discussed in the CSR and sustainability literatures (e.g., Dahlsrud, 2008; Wilburn & Wilburn, 2011) as a key reason for companies' engagement in social activities to obtain communities' consent for economic operations. These considerations relate to the characteristics of cultures with higher power distance in that power bases provide social order, stability and harmony. Consequently, companies in such cultures are more likely to engage in social sustainability practices.

Related to environmental sustainability practices, Husted (2005) discusses how in high power distance cultures the merits of environmental sustainability need to be linked to the interests of peak companies' leadership, due to their capacity to impact their membership. Ho et al. (2012) found a positive correlation between power distance and environmental performance. These indications suggest that noble obligations as discussed previously with regard to social sustainability practices may apply in comparable ways to environmental sustainability practices. While environmental sustainability practices might not be targeted toward specific constituencies, they impact society rather widely. Consequently, engaging in these practices is a means for those in power to safeguard established power bases in a more general way. In addition, environmental quality and sustainability affect those in charge themselves. Thus, engagement in environmental sustainability practices can also be linked to the previously discussed self-protective attributes, common in cultures characterized by high power distance practices. Therefore, it is likely that companies in such cultures show higher degrees of environmental sustainability practices.

Collectively, engaging in economic, social, and environmental sustainability practices can help preserve established power bases. For this reason, it is likely that companies in cultures with greater power distance practices will engage in economic, social, and environmental sustainability practices as germane from a TBL perspective. Accordingly, we hypothesize:

H4. Companies in cultures characterized by greater power distance practices exhibit a higher degree of (a) economic sustainability practices, (b) social sustainability practices, and (c) environmental sustainability practices.

2.4.5. Performance orientation

Performance orientation, according to Javidan (2004, p. 239), is defined as "the extent to which a community encourages and rewards innovation, high standards, and performance improvement". It is "an internally consistent set of practices and values that have an impact on the way a society defines success in adapting to external challenges, and the way the society manages interrelationships among its people" (p. 243). Cultures higher in performance orientation tend to reward performance, competitiveness, and materialism, believe that individuals are in control, and have a sense of urgency. In these cultures, individual

achievement tends to be rewarded, and results are emphasized more than people (Javidan, 2004).

One important manifestation of performance orientation is how individuals relate to the outside world. In this regard, Parboteeah et al. (2012) argue that high performance orientation cultures are more likely to believe that they can dominate the outside world, and find that performance orientation practices are negatively related to individuals' propensity to support sustainability initiatives. Furthermore, the literature on responsible leadership (e.g., Miska & Mendenhall, 2015) suggests that in order to achieve economic, social, and environmental targets, business leaders need to develop broader perspectives on companies' various stakeholders, rather than performance orientation within the companies they direct. This broader view challenges the understanding of performance orientation, as it de-emphasizes the importance of individual performance in favor of more harmonious and cooperative practices toward a company's constituencies.

Regarding economic sustainability practices, due to the focus on materialism and competitiveness in high performance orientation cultures, more emphasis tends to be on the ends, and less on the means to achieve such ends (cf., Cullen, Parboteeah, & Hoegl, 2004; Parboteeah, Bronson, & Cullen, 2005). This suggests that in cultures characterized by high performance orientation, less attention is usually paid to how outcomes are attained (Messner & Rosenfeld, 2001), implying the possibility that they may be achieved in unsustainable ways. This contrasts with the notion of economic sustainability with regard to enduring economic prosperity; also because high performance orientation cultures have a sense of urgency. In addition, economic sustainability does not clearly align with the notion of personal achievement as relevant for cultures with higher performance orientation, and its accomplishment cannot be plainly translated into rewardable performance (cf., Hubbard, 2009). Therefore, it is likely that companies in cultures with greater performance orientation practices are less likely to engage in economic sustainability practices.

As for social sustainability practices, Alas (2006) suggests that a strong focus on performance orientation in companies may hinder the development of social capital, a concept which can be related to the social domain of sustainability (Lehtonen, 2004). Comparably, the characteristics of high performance orientation cultures with regard to the emphasis on results rather than people and rewarding individual achievement rather than promoting cooperative spirit and quality of life, contrast with aspects such as social justice and positive social impact as relevant issues within the social domain of sustainability. Collectively, due to the focus on achievement and excellence above people (Parboteeah et al., 2012), it is likely that companies in cultures characterized by greater performance orientation practices are less likely to engage in social sustainability practices.

Related to environmental sustainability practices, it has been suggested that in cultures with higher performance orientation individuals are more likely to believe that they can dominate the outside world and exploit the environment, potentially jeopardizing environmental sustainability (Cullen et al., 2004; Parboteeah et al., 2012). In a similar vein, Husted (2005) suggested that a focus on growth results in lower environmental sustainability, due to a slower adoption of more costly environmental technology by companies, impeding their environmental responsiveness. These perspectives correspond to characteristics in high performance orientation cultures, in particular the focus on materialism and the notion of individuals in control. Due to these attributes – as opposed to the establishment of harmony with the environment rather than control, as common in low performance orientation cultures – it is likely that companies in cultures characterized by greater performance orientation practices are less likely to engage in environmental sustainability practices.

The relevance of personal achievement and materialism in high performance orientation cultures make it less likely that companies in these cultures will consider economic, social, and environmental sustainability practices as relevant from a TBL perspective. Based on this discussion, we hypothesize:

H5. Companies in cultures characterized by greater performance orientation practices exhibit a lower degree of (a) economic sustainability practices, (b) social sustainability practices, and (c) environmental sustainability practices.

2.4.6. Culture and sustainability beyond country borders

Culture scholars have been acknowledging that the use of country as the sole aggregation unit for culture, while common, may not be fully apt (Brockner, 2003; Kirkman, Lowe, & Gibson, 2006; Peterson & Søndergaard, 2014; Sackmann & Phillips,2004). For example, Caprar et al. (2015, p. 1012) emphasize that there is "increasing evidence that country might be a less appropriate "container" of culture compared with other potential clustering dimensions" such as age-groups, socio-economic classes, or professional communities, as suggested by Taras, Steel, and Kirkman (2016). Among the various approaches to conceptualize culture are attempts to group countries into clusters based on cultural similarity and dissimilarity (e.g., Friedman, Ronen, Shenkar, & Asher, 2016; Gupta, Hanges, & Dorfman, 2002; Shenkar, 1985, 2013;).

Sustainability and CSR research comparably suggest that country groupings rather than focus on individual countries might be important. In this regard, empirical studies underline variations between groups of countries, such as differences between Eastern and Western Europe (Furrer et al., 2010), differences between Europe and North America (Doh & Guay, 2006; Matten & Moon, 2008; Sotorrío & Sánchez,2008), or variability among sets of Asian countries, Western Europe, Eastern and Central Europe, Australia and New Zealand, the US and Canada, as well as the Middle East and Africa (Baughn & McIntosh, 2007). The underlying key mechanism of such work is the perspective that sustainability practices are culturally embedded (Höllerer, 2013), and while each country may have a unique culture, groups of countries with similar cultures may exist (Dickson & Den Hartog, 2005), affecting the respective sustainability practices within these clusters. In this context, Donaldson and Walsh (2015) point out that a country's borders may not bind society any more.

The consideration of culture's effects on sustainability practices beyond country boundaries aligns well with institutional theory in two aspects. First, institutional theory is generally skeptical toward atomistic accounts of social processes and instead relies on the conviction that institutional arrangements and practices are relevant in view of actual organizational action (DiMaggio & Powell, 1991; Wooten & Hoffman,2008). Consequently, institutional theory is not restricted to country boundaries; instead, it assumes a collective audience, or an institutional field as a contextualized space where different organizations involve themselves in relation to matters relevant to them (Wooten & Hoffman, 2008), such as sustainability practices. Second, institutional theory acknowledges various levels of analysis at which it is functional (Jamali & Neville, 2011). Scott (2001) identified several categories of relevant levels of analysis commonly used in relation to institutional theory – such as the world system, society, and the organizational field – and suggested that the key underlying dimension is the scope of the phenomena encompassed. This reflects the considerations of both culture and sustainability scholars to conceptualize culture and sustainability beyond country boundaries.

When differences in sustainability practices are accounted for at the cluster level of analysis, the effects of cultural practices on sustainability practices are likely to vary, compared to the country level of analysis. While at the country level cultural practices are likely to affect sustainability practices indirectly through norming and conforming effects in relation to formal institutions (Caprar & Neville, 2012), considered within clusters they are likely to have a more direct influence on sustainability practices. On the one hand, this is due to the cultural embeddedness of sustainability practices at the cluster level. While clusters of countries do not represent formal entities, commonalities in cultural practices might affect companies' sustainability

practices in similar ways. On the other hand, this is due to the relatively weaker impact of formal institutions at the cluster compared to the country level of analysis. For example, while the European Union is a relevant formal institution in Eastern and Western Europe and affects laws and regulations in each member country, differences between these areas exist in terms of attitudes toward corporate responsibilities (Furrer et al., 2010). Consequently, we hypothesize that the level of analysis at which differences in sustainability practices are accounted for will result in varying effects of cultural practices on sustainability practices.

H6. Cultural practices will exhibit a different influence on companies' (a) economic sustainability practices, (b) social sustainability practices, and (c) environmental sustainability practices when differences in sustainability practices are accounted for at the cluster as opposed to the country level.

3. Methods

3.1. Sample and data collection

To test the above hypotheses, we used 2014 as our base year for analysis and constructed a sample by combining data from multiple databases and sources. We obtained economic, social, and environmental sustainability metrics from Thomson Reuters's ASSET4 database, which provides systematic, auditable, and objective data on the sustainability practices of more than 4000 companies globally, representing a large number of different industries. We obtained cultural practices country scores from project GLOBE (House et al., 2004), which also provided information on groupings of countries with similar cultural characteristics into cultural clusters. Control variables at the firm level of analysis were extracted from Thomson Reuters's Worldscope database, and control variables at the country level were obtained from the World Bank's World Development Indicator databank.

The resulting sample included information on 4862 companies from 43 countries. For 1924 of these companies, data was consistently available for all study variables. These companies, which formed our sample, were headquartered in 36 countries and represented nine cultural clusters. Comparable proportions were from North America (29%), Europe (27%), and Asia (28%), while fewer (15%) originated from Australia and Oceania. As for industries, a relatively large proportion of these companies represented financials and industrials (each 19%), followed by consumer services (15%) and consumer goods (12%), basic materials (10%), oil and gas (7%), technology (7%), and other industries (11%). Appendix B, Supplementary material lists the countries and industries included in the sample.

3.2. Dependent variables

As highlighted by Ioannou and Serafeim (2012), the multi-domain nature of the underlying theoretical constructs and limited insights provided by measures that focus on firms' single activities are among the main challenges of sustainability-related measures. Examples of sustainability metrics include Rees and Wackernagel's (1996) ecological footprint, the stock indices FTSE4Good and the Dow Jones Sustainability Index (DJSI), company-specific measures according to the TBL perspective (Székely & Knirsch, 2005), as well as approaches considering different indicators of economic, social, and environmental aspects (e.g., Cunha Callado & Fensterseifer, 2011; Keeble, Topiol, & Berkeley, 2003), thus mirroring the TBL perspective on sustainability. With regard to the multiplicity of sustainability-measurement approaches, Waddock and Graves (1997, p. 304) point to a "need for a multidimensional measure applied across a wide range of industries and larger samples of companies".

To address this requirement, we utilized Thomson Reuters's ASSET4 database. In generating the data, over 120 specifically-trained research

analysts collected information on more than 500 data points covering every aspect of firms' sustainability reporting. Data sources include company websites, sustainability reports and stock exchange filings, as well as websites of non-governmental organizations and various news sources. Each data point was subject to a multi-step verification process, including data-entry checks, automated quality rules, and historical comparisons. The qualitative data was transformed into consistent items allowing for quantitative analysis. These data points were used to calculate more than 200 key performance indicators, organized into eighteen categories within economic, social, environmental, and corporate governance pillars. For each pillar, a standardized score was calculated, allowing for benchmarking with other firms.

For the purposes of the present study, we used the economic, social, and environmental metrics provided by the ASSET4 database. These align with our definition of corporate sustainability practices with a TBL lens as activities that contribute to the three sustainability domains and meet the demands of stakeholders with a longer-term outlook (Carroll & Buchholtz, 2014; Svensson et al., 2010). According to Thomson Reuters, the economic pillar is defined as "… a company's capacity to generate sustainable growth and a high return on investment through the efficient use of all its resources". It reflects a company's overall financial health and its efforts to generate long-term shareholder value by utilizing best management practices. Correspondingly, practices related to shareholder loyalty and engagement, customer satisfaction, financial transparency, and performance are considered. The social pillar is defined as "… a company's capacity to generate trust and loyalty with its workforce, customers and society, through its use of best management practices". It reflects a company's long-term approaches toward safeguarding good stakeholder relations. Congruently, it includes, among others, practices related to the quality of employment, employee training and development, human-rights issues, and community development. Finally, the environmental pillar is defined as "…a company's impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems". It reflects a company's long-term efforts to avoid environmental risks and to leverage environmental opportunities. Therefore, it considers practices related to aspects such as reduction of emissions, resource and energy efficiency, and product innovation. For each company, we obtained its standardized economic, social, and environmental scores as available through Thomson Reuters's ASSET4 database, which we used as dependent-variable measures.

3.3. Independent variables

For each company, we obtained its country code from the Thomson Reuters Worldscope database, which served to allocate the GLOBE culture scores to companies. Due to our focus on cultural practices, we utilized the GLOBE cultural practices country scores and assigned them to companies for which these allocations were clearly attainable. This was possible in most cases, except for Swiss and South African companies. In the case of Switzerland, project GLOBE provides separate scores for the German-speaking and French-speaking parts of the country, while for South Africa, there is a distinction between a black and a white sample. As these differences did not allow for unambiguous allocations of the GLOBE cultural practices scores to companies, we did not consider companies with Swiss or South African country codes for our analyses. For Germany, project GLOBE provides cultural practices scores for former East and former West Germany. Since the differences between the two scores across all GLOBE dimensions are relatively small, we calculated average scores which we used for all German companies.

In addition to providing cultural practices country scores, project GLOBE groups countries with similar cultural characteristics into ten cultural clusters. These groupings build on Ronen and Shenkar's (1985) clustering of countries with comparable work-related values and attitudes, and are the result of analyses of the cultural values and practices

of the 62 countries assessed by GLOBE researchers (Gupta & Hanges, 2004). Countries within a cluster are culturally similar; they frequently share a common language, have comparable physical climate, and are often in geographical proximity (Resick, Hanges, Dickson, & Mitchelson, 2006). Using the information on these clusters provided by project GLOBE, we recorded for each company its allocation to one of the ten clusters: Anglo, Confucian Asia, Eastern Europe, Germanic Europe, Latin America, Latin Europe, Middle East, Nordic Europe, Southern Asia, and Sub-Saharan Africa. Due to the small number of companies (two) within the Sub-Saharan Africa cluster, we did not consider this cluster for our analyses.

3.4. Control variables

We additionally included control variables at the firm and country levels of analysis. At the firm level, we controlled for total assets, earnings before interest and taxes (EBIT), number of employees, international operations, and industry, as available from the Worldscope database. As firm size may affect companies' sustainability initiatives (e.g., Ioannou & Serafeim, 2012) in that larger firms have greater availability of resources and competences that ease the development of sustainability practices (Jabbour, Jabbour, Latan, Teixeira, & de Oliveira, 2014), we used the number of total assets as a proxy for a firm's size. Furthermore, as the extent of firms' sustainability practices may be linked to their profitability (e.g., Waldman et al., 2006), we controlled for firm performance by using EBIT as a proxy. In addition, since employees may pressurize firms' sustainability-related practices (Fernandez-Feijoo, Romero, & Ruiz, 2014; Huang & Kung, 2010), we controlled for the number of employees of each firm. Due to possible time-lag effects, for these control variables we considered the three years preceding our base year. Owing to high kurtosis, they were log-modulus transformed (John & Draper, 1980). Since domestic and international companies may differ in their sustainability practices (cf., Barkemeyer, Preuss, & Lee, 2015; Bondy & Starkey, 2014; Chakrabarty & Wang,2012), we recorded whether the companies in our sample operated purely domestically or as well internationally. We dummy-coded accordingly, as 0 for domestic and 1 for internationally operating companies. Finally, to account for industry-related effects, we controlled for industry at the two-digit supersector level of the FTSE/Dow Jones Industrial Classification Benchmark.

At the country level, we included gross domestic product (GDP) per capita based on purchasing-power parity as well as population growth data from the World Bank's World Development Indicator databank. GDP per capita is the monetary value of all final goods and services generated per resident in an economy, using purchasing-power parity rates for reasons of comparison across economies. As previous literature (e.g., Parboteeah et al., 2012; Waldman et al., 2006) suggests, in countries with higher GDP, and thus higher spending and generally advanced wealth levels, there may be higher requirements for sustainability-related practices. Strong population growth can lead to demographic pressure (Husted, 2005), possibly resulting in environmental degradation or social inequality. We therefore included the annual population growth rate for each country. As with the firm-level control variables, due to possible time-lag effects we also considered the three years preceding our base year and carried out log-modulus transformations for each of the country-level control variables.

3.5. Data analysis

To examine the effects of the five GLOBE cultural practices dimensions on companies' sustainability practices, and to test H1–H6, we relied on hierarchical linear models (HLM, e.g., McCulloch & Searle, 2001). These effects were modelled in three variants (always as fixed effects): with a common intercept (i.e., without accounting for firms being nested in countries and/or cultural clusters) and with country and cluster as random-intercept effects, respectively. All predictors were grand-mean-centered before being entered into the analyses. Since the

intercorrelations between control variables were low (mean r = 0.12), we entered them simultaneously (also as fixed effects, except for the categorical variables international operations and industry). By contrast, the five cultural practices dimensions had higher intercorrelations (mean r = 0.26), and so were analyzed on a one-by-one basis, to avoid confounding the estimated effect of one cultural practices dimension with the estimated effects of others.

To test for differences in terms of effect sizes between country and cultural-cluster models, we compared the fixed-effect coefficients of the cultural practices dimensions as produced for the country and cultural-cluster models by calculating a Z statistic according to the formula recommended by Paternoster, Brame, Mazerolle, and Piquero (1998). Z values ≥ 1.65 and ≥ 2.33 indicate a statistically significant difference at the 5% and 1% levels, respectively (one-tailed).

We conducted these analyses in R (R Core Team, 2015), with the lme4 and lmerTest packages (Bates, Mächler, Bolker, & Walker, 2015; Kuznetsova, Brockhoff, & Christensen, 2016) used for HLM models. Since the number of clusters is quite small, and the number of fixed effects rather large in the models including the control variables, we used Restricted Maximum Likelihood (REML) (e.g., Hayes, 2006). The pseudo r squared values were calculated with the MuMIn package (Bartoń, 2016), with marginal R^2 (R^2m) representing the variance explained by fixed effects and conditional R^2 (R^2c) representing the variance explained by the entire model (i.e., fixed and random effects; e.g., Nakagawa & Schielzeth, 2013).

4. Results

The descriptive statistics and correlations for all study variables are presented in Table 2. Results of the multivariate HLM analyses are shown in Table 3, which for each of the three dependent variables outlines the results of the three models (common intercept, country, and cultural cluster). Next, we present our findings for the culture dimensions (H1–H5) in more detail, as well as the comparisons between the influences of culture in terms of country and cluster (H6).

4.1. Common-intercept models

In these models, where we did not account for country and/or cluster differences in sustainability practices, we consistently found positive effects of future orientation, gender egalitarianism, uncertainty avoidance, and power distance practices, as well as negative effects of performance orientation practices on economic, social, and environmental sustainability practices. Therefore, the directions of these effects were as hypothesized. They were statistically significant, too, except for the effects of future orientation practices on economic and social sustainability practices. Consequently, these analyses provide good support to H1c, as well as H2–H5.

4.2. Country models

In the country models, where we accounted for country effects, the signs of the effects were the same as in the common-intercept models and as hypothesized. However, of these only some were significant, which was the case for the relationships between future orientation practices and environmental sustainability practices, gender egalitarianism practices and economic sustainability practices, uncertainty avoidance practices and both social and environmental sustainability practices, as well as performance orientation practices and economic sustainability practices. Therefore, the results of these models support H1c, H2a, H3b and H3c, as well as H5a.

4.3. Cultural-cluster models

When we accounted for cluster effects, we again found the directions of effects as hypothesized. As in the common-intercept models and

Table 2
Descriptive statistics and correlations among study variables.

	mean	std. dev.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Future orientation practices (c)	0.07	0.25	–												
2. Gender egalitarianism practices (c)	0.03	0.23	0.25	–											
3. Uncertainty avoidance practices (c)	0.07	0.38	0.44	0.55	–										
4. Power distance practices (c)	−0.01	0.26	−0.33	−0.19	−0.11	–									
5. Performance orientation practices (c)	0.00	0.21	0.16	−0.03	0.01	−0.45	–								
6. GDP (l, c)	0.05	0.50	0.31	0.33	0.18	−0.52	0.58	–							
7. Population growth (l, c)	−0.06	0.63	−0.02	0.19	0.12	−0.50	0.27	0.18	–						
8. Total assets (l, c)	0.00	0.33	−0.05	−0.00	0.02	0.10	−0.06	−0.04	−0.13	–					
9. EBIT (l, c)	−0.02	0.13	−0.14	−0.21	−0.18	0.08	−0.10	−0.25	−0.03	0.12	–				
10. Employees (l, c)	0.02	0.45	−0.09	−0.02	0.04	0.09	0.02	−0.02	−0.07	0.42	0.05	–			
11. International operations (0−1 dummy)	0.68	0.47	0.09	0.10	0.15	0.06	−0.05	0.05	−0.09	0.08	−0.03	0.15	–		
12. Economic sustainability practices	52.09	29.53	0.02	0.10	0.10	0.10	−0.08	0.02	−0.12	0.19	0.03	0.22	0.22	–	
13. Social sustainability practices	50.61	30.48	−0.00	0.11	0.17	0.25	−0.21	−0.11	−0.23	0.24	0.06	0.32	0.37	0.61	–
14. Environmental sustainability practices	50.92	32.40	0.06	0.03	0.11	0.28	−0.23	−0.16	−0.33	0.27	0.06	0.33	0.35	0.53	0.82

Notes: N = 1924 companies, 36 countries, 9 cultural clusters. All correlations ≥ .05 are significant at the 5% level (two-tailed). c: centered variable. l, c: log-modulus transformed and centered variable.

in contrast to the country models, most effects, except three – the effects of uncertainty avoidance, power distance, and performance orientation practices on economic sustainability practices – were statistically significant. Therefore, the findings from these models support H1-H2 as well as H3b-H5b and H3c-H5c.

Overall, in terms of directions of effects, our findings suggest consistent relationships, and collectively provide good support for H1-H5. In this regard, we found that for the three sustainability domains, each of the five cultural practices dimensions consistently predicted economic, social, and environmental sustainability practices. Our analyses also propose that culture's effects vary depending on how sustainability differences are accounted for in terms of level of analysis, as suggested in H6. While most effects were significant in the common-intercept and cultural-cluster models, they tended to be less frequently significant in the country models, owing to larger standard errors and consequently confidence intervals. In addition, the parameter estimates for many effects appeared larger in the cultural-cluster models. However, these differences failed to reach statistical significance, except in the case of the effect of gender egalitarianism practices on social sustainability practices. Collectively, our analyses align with H6 insofar as with only a few exceptions the effects of the cultural practices dimensions were more frequently significant in the common-intercept and cultural-cluster models as they could be estimated more precisely with these approaches, but less frequently so in the country models, suggesting that the effect of culture on sustainability practices might vary according to the level of analysis in question.

5. Discussion and conclusions

In this study, we have examined the role of cultural practices in determining corporate sustainability practices. We show that five GLOBE cultural practices dimensions either consistently tend to positively or negatively relate to the economic, social, and environmental sustainability practices of 1924 companies. Collectively, our research thus emphasizes an often under-researched informal institutional element, namely culture, in the context of sustainability (Peng et al., 2014). Drawing on institutional theory and the isomorphic mechanism that firms tend to adopt sustainability practices in accordance with characteristics that constitute a culturally-supported base of legitimacy (Scott, 2001), our findings indicate a set of cultural practices that with a TBL lens on sustainability are relevant. Due to the TBL focus of our analyses, and in this way a holistic, integrative view on sustainability, our study is among the first to indicate cultural practices dimensions that either make firms more (future orientation, gender egalitarianism, uncertainty avoidance, and power distance practices) or less (performance orientation practices) likely to engage in activities within all

three domains of sustainability. Therefore, and from the perspective of institutional theory, our findings profile a set of cultural characteristics that can constitute isomorphic pressures with regard to companies' engagement in TBL sustainability practices. In addition, our study indicates that these isomorphic pressures might not be restricted to country boundaries, but are likely to apply as well within clusters of countries characterized by cultural similarity and, thus, comparable isomorphic pressures.

Relatedly, the theoretical contribution this study aims to make is two-fold. First, we emphasize the need to adopt a multi-domain TBL view on sustainability with regard to cultural antecedents, considering the economic, social, and environmental domains of sustainability. This aligns with recent advancements in the sustainability literature to adopt rather paradoxical perspectives against trade-offs between the three sustainability domains (Hahn et al., 2015; Hahn, Preuss, Pinkse, & Figge, 2014). Since culture is one element of the systemic context in which companies are embedded, and from which tensions along the three domains might arise (Granovetter, 1985; Hahn et al., 2010), specifying this relatively under-researched contextual element better can help define some of the contextual sources that might cause and resolve paradoxical sustainability tensions. Second, we examine sustainability practices from a country as well as from a cluster perspective, emphasizing the importance of a multi-level view on cultural antecedents to corporate sustainability practices. This aligns with both sustainability and culture research. In this regard, literature on sustainability and related concepts like CSR increasingly points to the importance of considering antecedents at multiple levels of analysis (Aguilera, Rupp, Williams, & Ganapathi, 2007; Aguinis & Glavas, 2012; Van Marrewijk & Werre,2003), given that sustainability is a multi-level phenomenon. Comparably, culture scholars (Brockner, 2003; Caprar et al., 2015; Kirkman et al., 2006; Peterson & Søndergaard, 2014; Sackmann & Phillips, 2004) have been pointing to conceptualizations of culture beyond the frequently applied country proxy. Therefore, investigating cultural antecedents to corporate sustainability practices at multiple levels of analysis is promising.

5.1. Multi-domain TBL view on cultural antecedents to corporate sustainability practices

Variations in conceptualizing sustainability have resulted in a number of studies investigating culture's effects on diverse and select aspects of sustainability, with rather inconsistent findings. In the light of the TBL perspective, we delineate cultural characteristics that tend to be consistently positively or negatively associated with practices within the economic, social, and environmental domains of sustainability. In the extant literature, only few empirical studies have examined the

Table 3
HLM results.

	Economic sustainability practices			Social sustainability practices			Environmental sustainability practices		
	Common-intercept model	Country model	Cultural-cluster model	Common-intercept model	Country model	Cultural-cluster model	Common-intercept model	Country model	Cultural-cluster model
Intercept	45.4 (1.90) **	48.6 (2.78) **	49.9 (3.69) **	38.3 (1.96) **	44.5 (3.64) **	44.2 (5.01) **	38.9 (2.54) **	42.4 (3.81) **	41.6 (5.31) **
Country-level controls									
GDP	2.12 (1.33)	2.41 (3.23)	3.97 (1.84) *	−4.63 (1.25) **	0.33 (4.34)	−2.09 (1.75)	−6.81 (1.25) **	1.08 (3.98)	−4.34 (1.79) *
Population growth	−2.38 (1.08) *	−4.36 (3.13)	−6.80 (1.45) **	−6.23 (1.01) **	−7.24 (4.17) †	−10.4 (1.37) **	−11.6 (1.02) **	−9.60 (3.84) *	−14.8 (1.40) **
Firm-level controls									
Total assets	10.6 (2.62) **	10.3 (2.58) **	10.6 (2.59) **	14.8 (2.50) **	14.0 (2.38) **	14.6 (2.43) **	20.3 (2.56) **	19.9 (2.49) **	20.5 (2.52) **
EBIT	5.81 (4.93)	8.69 (6.01)	8.53 (4.92) †	5.48 (4.64)	13.7 (6.31) *	9.51 (4.52) *	1.96 (4.66)	7.97 (6.22)	3.21 (4.62)
Employees	9.57 (1.64) **	9.63 (1.65) **	8.88 (1.63) **	13.1 (1.55) **	12.9 (1.49) **	11.4 (1.50) **	13.3 (1.57) **	14.5 (1.54) **	12.7 (1.54) **
International operations	10.7 (1.48) **	8.46 (1.49) **	8.86 (1.47) **	17.8 (1.40) **	12.9 (1.34) **	14.8 (1.36) **	16.4 (1.41) **	12.8 (1.39) **	14.2 (1.40) **
Industry (icpt. std. dev.)	6.41	6.33	6.43	7.00	8.05	7.62	9.90	10.9	10.5
Country/cluster (icpt. std. dev.)		9.04	8.39		14.1	12.8		12.5	12.9
R^2c	0.15	0.22	0.23	0.28	0.43	0.41	0.37	0.46	0.48
R^2m	0.10	0.09	0.10	0.23	0.17	0.20	0.28	0.21	0.25
ICC1		0.11	0.09		0.27	0.23		0.24	0.20
Future orientation practices	2.04 (2.63)	5.09 (6.06)	8.85 (3.24) **	2.98 (2.47)	10.7 (8.28)	14.8 (3.04) **	12.4 (2.47) **	15.1 (7.22) *	21.9 (3.08) **
Z value (country vs. cluster)			0.55			0.46			0.87
Gender egalitarianism practices	14.6 (2.95) **	11.5 (6.45) †	8.86 (3.82) *	24.3 (2.74) **	10.5 (8.65)	23.4 (3.61) **	16.9 (2.78) **	9.51 (8.02)	18.4 (3.70) **
Z value (country vs. cluster)			0.35			1.38 †			1.01
Uncertainty avoidance practices	6.17 (1.75) **	4.64 (4.21)	3.02 (2.47)	13.3 (1.62) **	11.1 (5.58) †	14.4 (2.46) **	9.93 (1.65) **	11.3 (5.03) *	9.13 (2.47) **
Z value (country vs. cluster)			0.33			0.54			0.39
Power distance practices	6.70 (3.24) *	2.36 (6.62)	5.39 (3.69)	16.9 (3.03) **	4.17 (9.01)	14.1 (3.42) **	8.89 (3.07) **	0.30 (8.27)	10.0 (3.51) **
Z value (country vs. cluster)			0.40			1.03			1.08
Performance orientation practices	−18.9 (3.72) **	−14.9 (6.54) *	−6.30 (4.61)	−24.3 (3.48) **	−12.1 (9.54)	−12.0 (4.34) **	−22.5 (3.51) **	−12.3 (8.65)	−13.5 (4.44) **
Z value (country vs. cluster)			1.07			0.01			0.12
R^2c	0.16	0.22	0.23	0.34	0.46	0.49	0.41	0.48	0.49
R^2m	0.10	0.11	0.10	0.28	0.24	0.23	0.31	0.27	0.28

Note: Estimate (standard error); † $p < .10$; * $p < .05$; ** $p < .01$; n = 1924.

GLOBE cultural practices scores and their effects on sustainability-related aspects (e.g., Alas, 2006; Parboteeah et al., 2012; Roy & Goll, 2014). Of those, the positive effect of future orientation practices and the negative effect of performance orientation practices on individuals' propensity to support sustainability initiatives in Parboteeah et al.'s (2012) study correspond to our findings. Comparably, the positive effects related to gender egalitarianism on environmental performance and human development as identified by Roy and Goll (2014) are comparable to the positive effect we found for gender egalitarianism practices on corporate sustainability practices. When considering the larger body of studies that examines how culture influences corporate sustainability-related practices, including research using Hofstede's conceptualization (e.g., Scholtens & Dam, 2007; Thanetsunthorn, 2015) as well as the GLOBE cultural values dimensions (Waldman et al., 2006), it is noticeable that uncertainty avoidance and power distance are often associated with mixed and inconsistent findings. In this regard, our study may provide some lucidity as we investigated power distance and uncertainty avoidance practices with a TBL lens. Collectively, our results therefore complement past studies, which have tended to focus on selected aspects of sustainability. Our findings suggest that certain cultural characteristics, such as future orientation, may be relevant with regard to enhancing companies' sustainability practices, whereas others, such as performance orientation, may rather weaken these practices. Consequently, adopting a TBL perspective on cultural antecedents to corporate sustainability is important, as it can provide more clarity in terms of understanding how cultural characteristics may influence corporate sustainability.

Our findings additionally indicate a pattern that the five cultural practices dimensions investigated might be more predictive as regards the social and environmental and less predictive for the economic domain of sustainability practices. However, as more detailed testing of such variations was beyond the scope of this study, future research might benefit from examining the predictive strength of cultural practices on the three sustainability domains. Possible suggestions for variations in terms of strength might lie in the development of the sustainability concept itself and the related sense-making on the part of companies. In moving beyond the business case for corporate sustainability (Dyllick & Hockerts, 2002) and toward a more integrative view regarding social and environmental aspects, culture might be a crucial explanatory component. Therefore, adopting a TBL lens on sustainability is an important implication for future research in more completely uncovering the role culture plays in terms of corporate sustainability practices. Understanding the effects of culture with such a multi-domain perspective can be relevant with regard to what Donaldson and Walsh (2015, p. 193) refer to as the creation of "Optimized Collective Value" or business success. From a TBL perspective, companies may create value and be successful by engaging in economic, social, and environmental sustainability practices. The creation of such value is likely to be collectively amplified in cultures characterized by certain cultural practices (e.g. high degrees of gender egalitarianism or future orientation practices), while other cultural practices (e.g., performance orientation practices) might rather lead to weakened creation of such value. Considering both the positive and negative effects of cultural practices on corporate sustainability practices therefore contributes to understanding why businesses create collective value in the ways they do.

5.2. Multi-level view on cultural antecedents to corporate sustainability practices

Our findings suggest that the effects of culture on corporate sustainability practices might vary depending on the level of analysis considered to study the phenomenon in question, in our case corporate sustainability practices. While we generally did not detect significant differences in terms of effect sizes when comparing the country and cultural-cluster models, we found an interesting pattern: Several of the parameter estimates appeared to be larger in the cultural-cluster than in the country models. In addition, the effects of the cultural practices dimensions were more frequently significant in the cultural-cluster models, indicating the importance of careful consideration of the level of analysis at which the effects of cultural practices on corporate sustainability practices are considered.

This observation corresponds to culture scholars' general recommendation that the frequent focus on countries may not be fully appropriate (Brockner, 2003; Caprar et al., 2015; Kirkman et al., 2006; Peterson & Søndergaard, 2014; Sackmann & Phillips, 2004), suggesting that alternative perspectives and considerations of different levels of analysis at which culture becomes relevant are necessary. Ronen and Shenkar (2013) note that cultural clustering can help progress beyond acknowledging the cultural relativity of theories toward more context-specific approaches. More attention to cluster perspectives might also be insightful with regard to questions of convergence and divergence of corporate sustainability practices globally. Specifically, considering countries in terms of cultural clusters appears a promising avenue, since developments within these clusters occur rather simultaneously and in comparable directions (cf., Inglehart & Baker, 2000). Such research could thus contribute to understanding convergence within, and divergence between, cultural clusters in relation to corporate sustainability practices.

While in our study we focused on countries and clusters of countries with similar cultures, within-country variations might be a further level of analysis germane for future research focusing on the effects of culture on corporate sustainability practices. In this regard, the complex interactions between formal and informal institutional influences like culture are an interesting aspect to consider that could advance both theory-building and empirical testing at the intersection of culture and sustainability studies. At the cluster level of analysis, culture may have a more direct influence on corporate sustainability practices due to the relative absence of formal institutions. In contrast, at the country level of analysis, culture may influence corporate sustainability practices more indirectly through norming and conforming effects in relation to established formal institutions (Caprar & Neville, 2012). Similar mechanisms are conceivable as well within countries, for which culture scholars (e.g., Kaasa, Vadi, & Varblane, 2014; Taras et al., 2016) have identified partly considerable intra-country cultural variance. Thus, acknowledging the multiple levels at which culture affects corporate sustainability practices can provide guidance for better understanding the complex interactions and mechanisms concerning the formal and informal institutional pressures for companies to engage in sustainability practices. In this regard, a further relevant avenue would be cultural values. Since valuing sustainability does not always translate into practicing it (Caprar & Neville, 2012) and because cultural values precede actual behavior (Egri et al., 2012), cultural values may play a more subtle role in determining corporate sustainability practices.

It is interesting to note that project GLOBE identified negative correlations between cultural values and cultural practices for seven dimensions, including four tested in this study: future orientation, uncertainty avoidance, power distance, and performance orientation (House et al., 2004). As some authors (Brewer & Venaik, 2010; Taras et al., 2010) remark, the negative correlations require more research. With regard to corporate sustainability, such research can provide valuable insights into the antecedents of corporate sustainability practices and may help shed light on the general nature of discrepancies between cultural values and practices when delineating the influence of culture on corporate sustainability.

5.3. Limitations and future research

Our study suffers from three caveats that need to be taken into consideration. These relate to the cultural-cluster framework, the interrelationships to formal institutions, and to the lack of consideration of within-country cultural variance.

First, our grouping into cultural clusters relied on project GLOBE and to some extent deviates from more recent approaches (e.g., Ronen & Shenkar, 2013). As Gupta et al. (2002, p. 12) note, "… there is no perfect or widely accepted clustering of countries". In addition, due to the lack of available data, we had to exclude one cultural cluster from our analyses. Therefore, we call for future research to examine whether the considerations related to cultural clusters regarding corporate sustainability practices as brought forth in this study apply as well to alternative clustering approaches. Furthermore, considering the discussions about the various approaches of comparative culture frameworks (Smith, 2006) and the similarities as well as differences of their underlying culture dimensions, it may be a relevant avenue for future research to replicate our study by applying alternative comparative culture frameworks.

Second, due to the focus of our study on culture as an informal institutional influence on corporate sustainability practices, we did not consider its interrelationships with formal institutional antecedents, such as laws and regulations related to corporate sustainability. With regard to the varying role that culture might play in determining corporate sustainability practices in connection with different levels of analysis, it appears promising for future research to examine the complex interplay between culture and formal institutional arrangements. In this regard and as discussed before, the role that cultural values as opposed to cultural practices play might be additionally relevant in uncovering the normative, along with the cultural-cognitive, conception of institutions.

Third, the present study did not account for within-country cultural variations. We therefore stress the need for incorporating more encompassing and complex cultural models of behavior (Egri et al., 2012) that would allow for theorizing and empirically examining such intra-country diversity related to corporate sustainability practices. In particular, and bearing in mind the multi-level considerations as suggested in this study, within-country variations of culture would provide valuable extensions of testing variations in culture's effects on corporate sustainability practices according to levels of analysis.

5.4. Managerial relevance

Today, the TBL sustainability concept is central to how many firms aim to operate. For managerial practice, our study is therefore relevant, as it delineates cultural characteristics that are related to economic, social, and environmental sustainability practices. Consequently, our findings can help managers to more clearly grasp these rather subtle components of the complex systemic context in which their companies are embedded. While corporate decision-makers are likely to be aware of laws, reporting standards, norms, and regulations related to corporate sustainability (cf., Barkemeyer et al., 2015) as well as initiatives like the United Nations' Sustainable Development Goals (UN, 2015), they may be less conscious of the cultural characteristics that affect corporate sustainability practices. In the light of recent discussions about the impact of companies' sustainability practices (e.g., WBCSD, 2008), it is therefore important that managers better understand how these practices are determined and shaped. In this regard, consideration of less obvious influences on corporate sustainability approaches like the cultural characteristics tested in this study may assist managers to assess more appropriately the role of informal institutional pressures on their corporate actions.

As our findings indicate that the impact of culture on corporate sustainability practices might not be limited to individual countries, but also apply to clusters of countries with similar cultural characteristics, managers who operate across countries might benefit from leveraging such comparisons. Our study can therefore be insightful for managers to navigate the challenge of appropriately balancing the extent to which corporate sustainability practices should be internationally standardized or need to be locally adapted. Within groups of countries that share common cultural attributes, similar corporate sustainability practices are likely to be appropriate, whereas between such clusters careful adaptations might be required.

5.5. Conclusion

We have examined how culture affects firms' economic, social, and environmental sustainability practices and found that future orientation, gender egalitarianism, uncertainty avoidance, and power distance practices consistently had positive effects, whereas performance orientation practices had negative effects on companies' practices pertaining to the three sustainability domains. Our analyses further suggested that these effects may be variably relevant, depending on whether sustainability practices are examined within or across country cultural boundaries, and indicated the relevance of clusters with comparable cultural characteristics.

Our intended contribution is two-fold: First, in the light of the rather mixed findings of extant research, we delineate and link relevant cultural practices dimensions to sustainability conceptualized from a TBL perspective and highlight the need to adopt multi-domain perspectives on sustainability. Second, we emphasize the necessity to adopt multi-level views when examining the effects of culture on corporate sustainability practices with regard to the country vis-à-vis the cultural cluster level.

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Appendix A. and B Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.jwb.2017.12.001.

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