



Promoting environmental performance through corporate social responsibility in controversial industry sectors

Nisar Ahmed Channa¹ · Tahir Hussain¹ · Gian Luca Casali² · Sarfraz Ahmed Dakhan¹ · Rabail Aisha¹

Received: 26 October 2020 / Accepted: 30 December 2020 / Published online: 14 January 2021
© The Author(s), under exclusive licence to Springer-Verlag GmbH, DE part of Springer Nature 2021

Abstract

Using two theoretical lenses—social identity theory (SIT) and organizational citizenship behavior towards environment (OCBE)—the current study examines the impact of employee CSR perceptions on environmental performance via mediation of employee pro-environmental behavior and organizational citizenship behavior towards environment (OCBE) utilizing data from three controversial industry sectors (i.e., hotel, tobacco, oil, and gas). We conducted a multi-time survey (sample $n = 282$) of employees working in organizations operating in controversial industry sectors to test a serial mediation model. The collected data were analyzed through partial least square structural equation modeling (PLS-SEM) technique using Smart PLS 3.3.2. The findings suggest that employee CSR perception significantly influences environmental performance. Furthermore, the mediating effects of employee pro-environmental behavior and OCBE were also found statistically significant. Using theories of SIT and OCBE, this study is an attempt to unveil what is unknown about CSR perception and environmental performance relationships.

Keywords Corporate social responsibility · Environmental performance · Pro-environmental behavior · Organizational citizenship behavior towards environment · Social identity theory

Introduction

Climate change is one of the greatest challenges ever faced by human kind and is regarded as a global issue caused by either natural variation, human activity, or organizational business activities (Umrani et al. 2020; Pham et al. 2020; Gilal et al.

2019; Kim et al. 2019; Robertson and Barling 2013). Organizations operating in controversial industry sectors are regarded as the most significant contributors to environmental degradation and climate change (Robertson and Barling 2013). Previously, the policy makers, industrial practitioners, businessmen, and academics did not pay ample attention to the environmental issues because they believed that the goods manufactured by their organizations did not have influence on the environment (Kraus et al. 2020). However, recently, the policy makers, industrial practitioners, businessmen, and scholars have noted the harmful impact of manufacturing activities on environmental degradation including air emissions, climate change, rising water and air pollution, usage of dangerous materials, and resource depletion (Ma et al. 2020). Due to the serious challenges of environmental degradation, stakeholders are forcing organizations to adopt innovative green practices and procedures to operate without harming the environment (Asadi et al. 2020; Yu et al. 2017). Organizations now need to concentrate on tasks related to the preservation of nature and environmental management.

Over the last few decades, academics and practitioners have paid more attention to “green” issues (Vallaster et al. 2019; Melay et al. 2017). From an academic perspective, researchers are gradually switching their attention from general

Responsible Editor: Nicholas Apergis

✉ Nisar Ahmed Channa
nisar.channa@iba-suk.edu.pk

Tahir Hussain
tahir.msmt17@iba-suk.edu.pk

Gian Luca Casali
luca.casali@qut.edu.au

Sarfraz Ahmed Dakhan
sarfraz@iba-suk.edu.pk

Rabail Aisha
rabailaisha.msmt17@iba-suk.edu.pk

¹ Department of Business Administration, Sukkur IBA University, Sukkur, Sindh, Pakistan

² School of Management, Queensland University of Technology, Brisbane, Queensland, Australia

cogitation to more specific constructs like green behavior (Robertson and Barling 2013), green HRM (Umrani et al. 2020), green supply chain management (Wu and Kung 2020), and green innovation (Singh et al. 2020). Competitive business environments have rapidly changed the business trends around the globe. It is not enough to gain competitive advantage and earn profit but also necessary to address harmful impacts of business operations on the environment. Hence, this research endeavor focusses on how organizations can enhance environmental performance.

Hotels are among the controversial industries across the globe producing massive amounts of pollution and waste. Research conducted by Mohammad (2014) suggests that the hotel industry pollutes the environment through unreasonable use of soft consumables, water, and energy causing climate change. In a similar way, Gössling et al. (2005) reported that on average, a hotel consumes 130 megajoules of energy per bed and releases 20.6 kg of carbon dioxide per night. In addition to that, a single hotel produces at least 1 kg of waste per customer and uses 218 gal of water per room per day (Bohdanowicz 2005; Bruns-Smith et al. 2015).

Similarly, tobacco industries are mentioned in the World Health Organization (WHO) (2017a, b) report which suggests that the environmental burden of growing, preserving, packing, manufacturing, transporting, and distributing 6.25 trillion cigarette sticks annually is in addition to the health burden. The toxic emissions from cigarettes smoked globally in a year cause an estimated 3000–6000 metric tons of formaldehyde and 12,000–47,000 tons of nicotine emissions (Novotny et al. 2015). Additionally, tobacco smoke causes the release of three major greenhouse gasses: methane, carbon dioxide, and nitrous oxide (Gilmour et al. 2006).

Organizations operating in these controversial industry sectors are making efforts to protect natural environment, to satisfy the demands of their respective stakeholders related with environmental protection and to gain competitive advantage (Anser et al. 2020a, b; Yadav and Pathak 2017). This pressure from stakeholders in the form of ecological and environmental protection forces organizations to devise strategies that mitigate harmful impacts of their businesses on natural environment. One of the strategies that organizations use to mitigate the negative impact of business on ecosystem is to practice corporate social responsibility (CSR) to fulfill social and environmental responsibilities and to improve organization's environmental performance (Anser et al. 2020a, b; Baker and Sinkula 2005).

CSR is defined as “serving people, communities, society, and environment in ways that go above and beyond what is legally required of a firm” (Gilal et al. 2020; Cai et al. 2012). It is evident from research that environment-oriented CSR activities significantly contribute to environmental sustainability through protecting and preserving natural environment (Shahzad et al. 2020). According to Tomomi (2010),

environmental CSR results in corporate competitiveness and environmental preservation. Likewise, Al-Abdin et al. (2018) and Madueno et al. (2016) found that environmental CSR significantly impacts economic and environmental performance of organizations in developing countries. Although a considerable amount of research has been conducted on the concept of CSR and several studies have recognized its contributions and advances in environmental and social domain, there is scarcity in literature about how CSR influences employee behavior to protect natural environment or contribute to environmental performance of the organization. Prior studies reported that members of organization collectively devote their efforts to preserve environment and environmental performance of the organization (Shahzad et al. 2020). Similarly, Beaudoin et al. (2019) in context of hospitality sector reported that individuals are the real actors who ensure excellent environmental and social performance of the organization.

Therefore, there is need to investigate the effects of employee CSR perception on environmental performance. It is further evident from literature that most of the CSR-related discussions have been applied to public relations, corporate sustainability, leadership, and business ethics, which suggests that most of the CSR literature mainly focused on the context of external stakeholders, investors, suppliers, government agencies, and consumers (Wang and Qian 2011; Poolthong and Mandhachitara 2009). However, surprisingly despite the critical role of internal stakeholders such as employees on organizational performance, their perspective is missing from CSR literature, and there is lack of research that empirically examined the effects of employees' perception about an organization's CSR activities on environmental performance. Literature further suggests that different practices may influence same employee behavior through different social and psychological processes (Jiang et al. 2012). As such, how and when employee CSR perception impacts environmental performance largely remains unknown.

This research endeavor aims to address these research gaps by exploring the effects of employees' CSR perception on organization's environmental performance, referring to “organization's commitment to protecting the environment and design business operations in a way aligned with prescribed limits of environmental care” (Gilal et al. 2019, p. 1579). Drawing on the literature of social identity theory (SIT), we developed and tested a conceptual model showing the social and psychological processes through which employees' CSR perception influences environmental performance. More specifically, from SIT perspective (Ashforth and Mael 1989), we argued that CSR perception would be positively related to environmental performance. Literature suggests that environment-oriented CSR practices shape employee pro-environmental behavior, which is “any measurable responsible environmental behaviors that will help to achieve environmental sustainability” (Norton et al. 2015). Consistent with

pro-environmental behavior literature, we argue that employee perception regarding CSR practices would lead to employee pro-environmental behavior, which are in turn significantly related environmental performance. Moreover, using theoretical foundations of organizational citizenship behavior (Organ 1988), we suggested that employee perception towards environment-oriented CSR practices would result in organizational citizenship behavior towards environment (OCBE), which is “discretionary acts by employees within the organization not rewarded or required that are directed towards the environmental improvement” (Daily et al. 2009a), which in turn would lead to environmental performance. In this way, this research provides insights into how and when employee CSR perception promotes environmental performance.

This research intended to make three theoretical contributions. First, it contributes to knowledge base of SIT and CSR literature by exploring environmental outcomes of CSR, which has not been studied sufficiently, to provide a better understanding of the concept and its consequences. The employee narrative of CSR is still in its infancy with inferences about its effect on environmental outcomes only broadly reaching the conceptualization stage. Therefore, this research extends the current theorizing in an emerging field of CSR. Second, this study contributes to the exploration of the mediating effects of pro-environmental behavior in association between employee CSR perception and environmental performance. Third, we contribute to uncovering the mediating role of OCBE in relationship between employee CSR perception and environmental performance. Figure 1 depicts theoretical framework of the study.

Theoretical background and literature review

CSR and environmental performance

In past scholarly literature, several studies have analyzed the link between CSR and financial performance, but very few

have tested the link of CSR with environmental performance (Suganthi 2020). Sidhoum and Serra (2017) have found the link of CSR with various dimensions of performance-social, environment, economic, and governance. Effective CSR and sustainability strategies enhance organizational outcomes (Mårtensson and Westerberg 2016; Helfaya and Moussa 2017). Several studies provided evidence that corporate sustainability performance is positively influenced by effective CSR and sustainability strategies (Aragón-Correa et al. 2008; Fraj-Andrés et al. 2009).

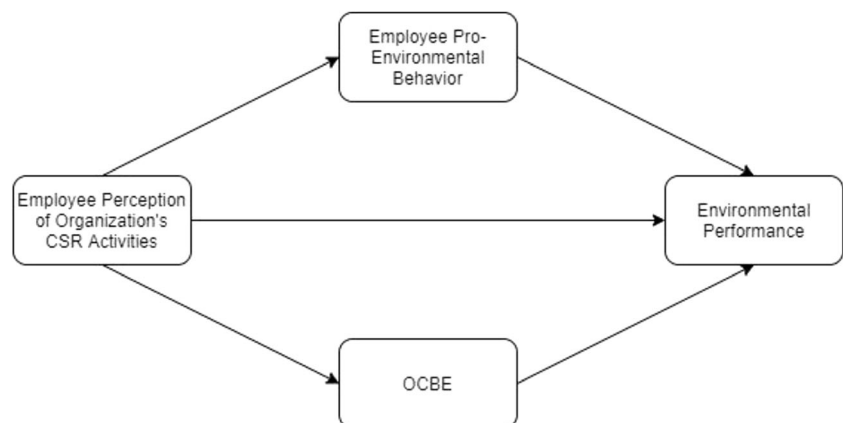
Tyteca (1996) firstly defined environmental performance as “the degree to which an organization is taking action to incorporate environmental considerations in its operational decisions and following the acceptable standards, self-interest and responds to stakeholders” (Anser et al. 2020a). Environmental concern is increasing among all stakeholders related to production, manufacturing, and distribution of goods and services (Kohtala 2015). Environmental performance can be improved through CSR commitment of managers; they can control pollution and waste of material during manufacturing process to produce recyclable products (Rivera et al. 2017). Chuang and Huang (2018) also acknowledged that the participation of managers in CSR activities can improve environmental performance. Based on the research framework and the links found in scholarly literature, we expect a significant relationship between CSR and environmental performance. Thus, we propose:

H1: CSR is positively related with environmental performance.

CSR and employee pro-environmental behavior

Organizations today are attempting hard to design strategies for environmental protection and sustainable operations (Cheema et al. 2020a, b). When a corporation initiates CSR activity based on environmental duties, it stimulates positive environmental behaviors among employees (Afsar et al.

Fig. 1 Theoretical model



2018). CSR initiatives of a corporation are shared through official e-mails, newsletters, conferences, and seminars giving employees knowledge about their social and environmental situation (Arnaud and Sekerka 2010). In corporations where CSR activities are considered top priority, willingness of employee to participate in environmental activities gets higher as the individual values match with corporate values of environmental protection (Vallaster 2017; Babiak and Trendafilova 2011). Norton et al. (2015) explained pro-environmental behavior as “any measurable responsible environmental behaviors that will help to achieve environmental sustainability.” Organizations create a culture that aims to develop environmental norms, values, and beliefs of workforce towards pro-environmental behaviors (Zientara and Zamojska 2018). CSR is a crucial factor of organization that can impact employees’ tendency to recognize their organization and eventually their propensity to engage in several behaviors that support firm (Tian and Robertson 2019). Based on above literature we propose:

H2: CSR is positively related with employee pro-environmental behavior.

Pro-environmental behavior and environmental performance

According to Ramus and Killmer (2007), there are three dimensions of pro-environmental behavior. The first dimension is pro-social nature of pro-environmental behaviors, the second is discretionary nature, and the third dimension is extra-role nature of pro-environmental behavior in which employees engage themselves in environmental protection and improvement of environmental performance. Past research based on pro-environmental behavior of employees have identified its implications for employers (e.g., enhanced financial performance) and for the employees (e.g., satisfaction and commitment) (Islam et al. 2019). However, a little research has been conducted related to its impact on natural environment (Tian and Robertson 2019; Norton et al. 2015).

People who have an internal sense of duty towards environment will likely behave in an environment friendly manner. On the contrary, those people who think that their small steps to take care of environment do not make any impact might not drive to act accordingly (Brewer and Stern 2005). This indicates that organizations should set the priority for employees’ awareness of environmental issues and behave accordingly. This not only enhances self-identity among employees but also pro-environmental actions (Van der Werff et al. 2013). People with a strong environmental self-identity often behave in a more environment friendly manner and act pro-environmentally which leads to enhance

the environmental performance of the organization. Thus, we propose:

H3: Pro-environmental behavior is positively related with environmental performance.

CSR and OCBE

To increase environmental sustainability, organizations engage in CSR activities (Rupp et al. 2015). In past literature, the role of personnel initiatives in enhancing the organizational performance and environmental practices has been established. The pro-environmental participation of personnel is regarded as the form of organizational citizenship behavior (OCB) (Boiral and Paillé 2012). Daily et al. (2009a) defined organizational citizenship behavior towards environment (OCBE) as “discretionary acts by employees within the organization not rewarded or required that are directed towards the environmental improvement.” Employees’ perceptions related to social responsiveness and organization’s ethics are two important factors in shaping employees’ OCBs (Jones 2010). According to Lin et al. (2010), CSR is positively related with OCB of employees.

CSR can be the source of catalyzing three dimensions—eco-helping which means helping and inspiring coworkers to engage in pro-environmental activities, eco-civic engagement like involvement in organizational programs related to environment, and eco-initiatives which means suggesting and executing innovative ideas to enhance natural environment of OCBE among personnel (Cheema et al. 2020a). According to Glavas and Piderit (2009), OCBE can be a source of sustainable pro-environmental force, which improves pro-environmental values in personnel and eventually their OCBE. Therefore, we propose following hypothesis:

H4: CSR is positively related with organizational citizenship behavior towards environment (OCBE).

OCBE and environmental performance

An advancement in the construct of OCB is presented by Boiral and Paillé (2012), which states OCB towards environment (OCBE). OCBE focuses on environmental issues of organization (Lamm et al. 2013). OCBE is individual’s unrestricted social behaviors not explicitly known by the formal procedures that contribute to an effective environmental management system of organizations (Boiral 2009). OCBE is an important component for successful execution of environmental management systems linking environmental strategies with workplace practices (Roy et al. 2001). Executing environmental management is strategically significant to organizations, as

responding to industrial changes can boost customers' demand of products and services and strengthen its competitive position (Molina-Azorín et al. 2015).

In Chinese manufacturing firms, Paillé et al. (2014) empirically tested pro-environmental behaviors of operational workers and found significant positive relationship between OCBE and environmental performance of the firm. Boiral et al. (2015) analyzed the influence of managers' OCBE in manufacturing organizations and proved positive link between manager's engagement in OCBE and organization's environmental management practices. Additionally, Kim et al. (2019) argued that success of environmental management of organization depends considerably on environmental behavior of employees that helps to enhance corporate environmental performance. Therefore, based on arguments above, we propose the following hypothesis:

H5: OCBE is positively related with environmental performance.

Mediating role of employee's pro-environmental behavior

In scholarly literature, there are different antecedents of employee's pro-environmental behavior such as individual level variable (self-efficacy, personal characteristics, motivation, environmental values, environmental knowledge, habit) (Sarkar 2008) and organizational level variables (top management's support, corporate culture, green HRM practices, and corporate environmentalism) (Boiral and Paillé 2012). CSR is also found to be one of the major antecedents of pro-environmental behavior in recent literature (Afsar and Umrani 2020; Cheema et al. 2020a, b; Suganthi 2020; Tian and Robertson 2019). In past studies, there is inconsistency in defining pro-environmental behaviors in the workplace (Afsar and Umrani 2020). CSR can be the source of employee motivation to perform extra-role, pro-social, and discretionary behavior (Afsar et al. 2018). Babiak and Trendafilova (2011) argued that workplace characterized by CSR-related activities positively influences willingness of employees to develop and execute eco-initiatives. Islam et al. (2019) have claimed that pro-environmental behavior has implications for both employees and employers. But there is little research conducted on the influence of the natural environment (Norton et al. 2015; Tian and Robertson 2019). Thus, we can propose that pro-environmental behavior can mediate the relationship between corporate social responsibility (CSR) and environmental performance. Based on above discussion, we propose:

H6: Pro-environmental behavior mediates the relationship between CSR and environmental performance.

Mediating role of OCBE

OCBE reflects willingness of employees to cooperate with his/her organization and coworkers to perform tasks above and beyond their job duties to benefit the natural environment (Luu 2017). In organizational culture, CSR cultivates sustainability values (Glavas and Kelley 2014) and community-oriented values (Gao et al. 2016). Such culture helps employees to increase awareness related to adverse environmental consequences. HR practices perform crucial roles in creating organizational citizenship behavior (OCB) among employees such that when employees go beyond their defined job role to help coworkers, put an extra effort, and support organizational activities, then performance of organization should be elevated (Messersmith et al. 2011). Likewise, Paillé et al. (2014) proposed OCBE as a linking mechanism between HR-environmental and performance relationships. Paillé et al. (2014) has analyzed the relationship between strategic HRM and environmental performance having OCBE as a mediator. The outcome of the study found that OCBE mediated the relationship between strategic HRM and environmental performance. CSR develops generous environmental values (Jin et al. 2013), which may increase OCBE among personnel (Luu 2017), while OCBE leads to environmental performance (Daily et al. 2009a, b). The above stated studies endorse the mediating role of OCBE; thus, we propose following hypothesis:

H7: OCBE mediates the relationship between CSR and environmental performance.

Serial mediation of employee's pro-environmental behavior and OCBE

Organizations need to contribute to natural environment and society by improving social sustainability and environmental performance (Ardito and Dangelico 2018). Rupp and Mallory (2015) argued that organizations can contribute to the natural environment with the help of CSR activities. When organizations learn and share environmental values, it creates a climate where employees are more often involved in sustainable behaviors (Vallaster 2017). Norton et al. (2015) said that employees tend to involve in pro-environmental behaviors based on the perception of support of organizations.

Employees adhere themselves with organization's green mission and environmentally friendly interests of its stakeholders when they are environmentally committed. Additionally, organizational commitment impacts on extra-

role behaviors (Srivastava and Dhar 2016). Montabon et al. (2016) also analyzed the link between organizational commitment and OCBE. Leaders' environmentally specific charisma may catalyze personnel OCBE having employee environmental commitment as a mediator (Tuan 2019). OCBE in turn has positive impact on environmental performance (Boiral et al. 2015; Paillé et al. 2014). Based on the above discussion, we infer that corporate social responsibility impacts employee's pro-environmental behavior which develops OCBE which in turn has impact on environmental performance. Thus, we propose:

H8: Employee's pro-environmental behavior and OCBE sequentially mediate the relationship between corporate social responsibility (CSR) and environmental performance.

Methodology

Participants and procedure

Our theoretical model consisted of mediation links; for this reason, a multi-wave design was used, and for at least 2 weeks, cause and effects were separated. Data for independent variable was collected at time-1, then at time-2 and time-3, data for the mediator 1 and mediator 2 was collected respectively, and finally data for the dependent variable was collected at time-4. There was a gap of at least 2 weeks for the data collection of each variable. Data for the current study was collected from personnel working in 10 corporate organizations operating in three controversial industry sectors (i.e., hotel, tobacco, oil, and gas) located in four metropolitan cities of Pakistan (i.e., Islamabad, Karachi, Lahore, and Rawalpindi). The selected organizations were known to be actively involved in CSR practices. The survey questionnaire method was used to collect the data. A cover letter was attached with each questionnaire, explaining the objective of the study and ensuring the confidentiality. It was ensured to respondents that the purpose of collecting their personal information is to match the responses at four intervals. For this purpose, a specific identification code was assigned to each questionnaire. At time-1 employee CSR perception was measured, pro-environmental behavior was measured at time-2, at time-3 OCBE, and finally environmental performance was analyzed at time-4.

At first, 500 questionnaires were distributed at time-1, out of which, 459 were returned, generating a 91% response rate. After 2 weeks, respondents of time-1 were asked to fill the second questionnaire. A total of 393 questionnaires were returned at time-2, generating a response rate of 85%. Communication was developed with the same respondents

after 2 weeks to complete third questionnaire. In this phase, 319 questionnaires were returned which makes 81% response rate. Finally, after 4 months, same respondents were contacted to complete the last questionnaire. At this stage, 282 questionnaires were returned, generating 88% response rate which makes overall 56% response rate of all four time periods.

Measures

All the construct measurements were adapted from prior published research. Five items for employees' perception of CSR were borrowed from Turker (2009). Likewise, pro-environmental behavior was assessed by using seven scale items of Robertson and Barling (2013). OCBE was measured by adapting ten scale items used by Boiral and Paillé (2012), and seven items for organization's environmental performance were adapted from Umrani et al. (2020). All indicators were measured on a 5-point Likert scale (1 to 5 ranging from strongly disagree to strongly agree).

Analysis

It is evident from academic research that structural models can either be tested through employing a covariance-based approach (Channa et al. 2020; Byrne and Van de Vijver 2010; Bock and Bargmann 1966) or variance-based approach (Umrani et al. 2020; Channa et al. 2020; Henseler et al. 2009; Chin 1998). To conduct this research, we selected variance-based approach and employed structural equation modeling (PLS-SEM) techniques (Ringle et al. 2015). The reason behind choosing PLS-SEM is because the focus of current study is on predictive (refer to Fig. 1); hence, Hair et al. (2016) regarded PLS-SEM more appropriate. Second, various researchers preferred it over traditional multivariate approaches (Umrani et al. 2020; Haenlein and Kaplan 2004). Finally, it estimates hypothesized relationships simultaneously, as reflected in structural models, and relationships between indicators and their corresponding latent constructs as reflected in the measurement model (Hair et al. 2016; Henseler et al. 2009; Hair et al. 2013).

Results

Following the recommendations suggested in PLS-SEM literature, we adopted a two-step approach to analyze the data and test hypothesized relationships (Channa et al. 2020; Umrani et al. 2020; Anderson and Gerbing 1988). In first step, we assessed the measurement model to ascertain inter-item reliability, convergent validity, internal consistency reliability, and discriminant validity. In second step, the structural model was examined to assess path coefficients and test hypotheses (Umrani et al. 2020; Henseler et al. 2009).

Measurement model

First, we evaluated factor loadings to ascertain inter-item reliability, and a threshold of 0.60 was maintained (Hair et al. 2014, 2016). Second, the average variance extracted (AVE) was analyzed to examine convergent validity, and a recommended threshold of 0.50 was maintained (Channa et al. 2020; Gefen et al. 2000; Bagozzi et al. 1991; Chin 1998). Third, to assure internal consistency reliability, composite reliability (CR) scores were examined, and all values were found above the threshold of 0.70 (Gefen et al. 2000; Fornell and Larcker 1981; Bagozzi et al. 1991; Chin 1998). The detailed results of measurement model are presented in Table 1.

Discriminant validity

We used heterotrait-monotrait ratio of correlations (HTMT) method to ascertain discriminant validity, as suggested by Henseler et al. (2015). The reason behind using HTMT method is recent criticism on Fornell and Larcker (1981) criterion. Results presented in Table 2 suggest that the values of all pair of constructs lie within the range of 0.85 as suggested by Henseler et al. (2015), except the pair of OCBE and environmental performance (0.944). It is further evident from academic research that sometimes it is difficult to differentiate

Table 2 Discriminant validity (HTMT ratio)

Construct	1	2	3	4
CSR				
EP	0.876			
OCBE	0.770	0.944		
PEB	0.814	0.767	0.698	

CSR corporate social responsibility, EP environmental performance, PEB pro-environmental behavior, OCBE organizational citizenship behavior towards environment

between the constructs that are conceptually different from each other in different research contexts (Henseler et al. 2015; Channa et al. 2020). It is further argued that selection of HTMT threshold is dependent upon many factors; therefore, derivation of HTMT threshold is subjective, and theoretical distinctiveness among construct provides a better understanding for the discriminant validity to establish. Consistent with these arguments, and theoretical underpinnings, OCBE is an antecedent of environmental performance; even though these concepts are conceptually different, it may still be difficult to empirically distinguish them as suggested by Channa et al. (2020) and Henseler et al. (2015). Additionally, Henseler et al. (2015) suggested

Table 1 Measurement model

Construct	Item	Loadings	Alpha	CR	AVE				
Corporate social responsibility	CSR1	0.914	0.850	0.893	0.630				
	CSR2	0.636							
	CSR3	0.748							
	CSR4	0.811							
	CSR5	0.832							
Environmental performance	EP1	0.737	0.876	0.908	0.623				
	EP2	0.848							
	EP3	0.627							
	EP4	0.796							
	EP6	0.886							
	EP7	0.816							
	Organizational citizenship behavior towards environment	OCBE1				0.703	0.840	0.878	0.508
OCBE10		0.803							
OCBE3		0.708							
OCBE5		0.619							
OCBE7		0.777							
OCBE8		0.700							
OCBE9		0.664							
Pro-environmental behavior		PEB7	0.917	0.918	0.941	0.764			
		PEB1	0.914						
	PEB2	0.662							
	PEB3	0.924							
	PEB6	0.923							

HTMT value of 0.95 as the most liberal criteria to assess discriminant validity; therefore, the HTMT scores of OCBE and environmental performance (0.944) are still acceptable to establish discriminant validity (Channa et al. 2020).

Structural model

Following suggested guidelines in PLS-SEM literature, next was to test structural model and assess significance of path coefficients (Henseler et al. 2009; Wah et al. 2012). Proposed hypotheses were tested through bootstrapping procedure with 5000 sub-samples using Smart PLS software version 3.2.9 (Ringle et al. 2015). The results of structural model summarized in Table 3 suggest that all hypothesized relationships were found statistically significant.

Explanatory power of the model

The explanatory power of the model was determined by examining R^2 or coefficient of determination. Running PLS algorithm in Smart PLS software, R^2 was computed, and all values were found above the suggested threshold of 0.10 (Falk and Miller 1992), as shown in Table 4.

Predictive relevance of the model

Similarly we computed cross validated redundancy (Q^2) to establish the predictive relevance of the model. According to Hair et al. (2014), the predictive relevance of the model is ascertained when all values of Q^2 exceeds zero. Results presented in Table 5 suggest that all Q^2 values met the suggested criteria to establish predictive relevance of the model.

Discussion

This research endeavor attempts to explore the underlying link between controversial industry sectors' employees'

Table 4 R^2 assessment

Construct	R^2
EP	0.82
OCBE	0.520
PEB	0.515

EP environmental performance, *PEB* pro-environmental behavior, *OCBE* organizational citizenship behavior towards environment

perception of their organization's CSR practices and environmental performance. Specifically, our study contributed to thin fabric of CSR research in many ways. First, this research contributed to the exploration of whether employee perception of CSR significantly influences organization's environmental performance. Second, our study contributed to exploration of the influence of CSR practices on employees' pro-environmental behavior in setting of controversial industry sectors. Third, this research contributed to whether employees' pro-environmental behavior enhances environmental performance of the organizations operating in controversial industry sectors. Fourth, we contributed to exploring the link between employees' perception about CSR practices and their OCBE. Fifth, our research examined whether OCBE contributes to environmental performance of the organizations. Sixth, our study contributed by investigating whether employees' pro-environmental behavior mediates the influence of employees' perception of CSR and organization's environmental performance. Seventh, we contributed by exploring the mediating effect of OCBE in relationship between employees' perception of CSR and environmental performance of the organization. Finally, this article provided additional evidence by investigating whether employees' pro-environmental behavior and OCBE sequentially mediate the relationship between employees' perception of CSR and environmental performance of the organization.

In line with hypothesized relations, our study supported the direct influence of employee perception of CSR on

Table 3 Structural model

Hypothesis	Relationships	M	SD	<i>t</i> values	<i>p</i> values
1	CSR --> EP	0.291	0.055	5.296	0.000
2	CSR --> PEB	0.718	0.035	20.706	0.000
3	PEB --> EP	0.109	0.048	2.276	0.023
4	CSR --> OCBE	0.483	0.066	7.334	0.000
5	OCBE --> EP	0.596	0.051	11.615	0.000
6	CSR --> PEB --> EP	0.078	0.035	2.269	0.024
7	CSR --> OCBE --> EP	0.288	0.044	6.528	0.000
8	CSR --> PEB --> OCBE --> EP	0.124	0.032	3.877	0.000

CSR corporate social responsibility, *EP* environmental performance, *PEB* pro-environmental behavior, *OCBE* organizational citizenship behavior towards environment

Table 5 Q^2 assessment

Construct	Q^2
EP	0.503
OCBE	0.247
PEB	0.383

EP environmental performance, *PEB* pro-environmental behavior, *OCBE* organizational citizenship behavior towards environment

environmental performance. This finding is consistent with previous empirical studies, which suggested the influence of CSR practices on organizational performance outcomes like financial performance (Cavaco and Crifo 2014) and increase in sales (Nyame-Asiamah and Ghulam 2019).

Our findings also supported the significant positive impact of employees’ perception of CSR on employees’ pro-environmental behavior. This can be attributed to the fact that when an organization practices CSR, its employees perceive that their organization is paying its social obligation towards society; therefore, they should also contribute to social and environmental efforts of the organization by participating in pro-environmental behaviors. This significant influence of employee perception of CSR on pro-environmental behavior is in line with previous studies (Tian and Robertson 2019), which suggested a link between organization’s CSR activities and its employees’ pro-environmental behavior.

Similarly, the direct influence of pro-environmental behavior on environmental performance is also supported by our findings. This can be put down to the fact that the spontaneity of employees’ eco-friendly behavior can improve environmental performance by supplementing environmental management systems. This effect of employees’ pro-environmental behavior on organization’s environmental performance is consistent with published literature (Kim et al. 2019) suggesting that pro-environmental behavior is a predictor of environmental performance.

Our findings further revealed the statistically significant link between CSR and OCBE. It is because practicing CSR signals a positive message to employees that organization is paying its obligation towards society by contributing its efforts for the betterment of society. When employees perceive that organization is significantly contributing its efforts to the development of society through various social initiatives, they become emotionally attached with the organization and exhibit extra-role work behaviors to achieve the environmental goals of the organization. This is also in line with previous studies (Luu 2017; Hericher et al. 2017) that reported a link between social initiatives of the organization and organizational citizenship behavior.

Our data further revealed the positive impact of OCBE on organization’s environmental performance. This finding shows

that employees of organizations practicing CSR activities put their extra-role efforts to achieve environmental goals of the organization. This can be attributed to the fact that employees who are committed to their organization perform tasks that are beyond their formal job descriptions to achieve organizational goals like environmental performance. This finding resembles the results of Umrani et al. (2020), Kim et al. (2019), and Dumont et al. (2017) that noted OCBE as predictor of environmental outcomes like environmental performance.

Further, to explore the underlying social and psychological mechanisms that facilitate the transference of the impact of CSR on environmental performance, we tested the mediation of employees’ pro-environmental behavior. As expected, our results showed that CSR practices induce employees’ pro-environmental behavior, which in turn contributes to environmental performance of the organization. In other words, our findings confirm that employees’ pro-environmental behavior mediates the relationship between CSR and environmental performance. These results are consistent with the findings of Tian and Robertson (2019) and Suganthi (2019), who suggested that CSR practices arose a sense of environmental responsibility among employees; in result they perform pro-environmental behaviors that help organization to achieve environmental performance.

Similarly, we examined the mediating effects of OCBE between CSR and environmental performance. Our results suggested statistically significant mediating effects of OCBE in relationship between CSR and environmental performance. This finding indicates that when organization practices CSR, employees perceive it as a positive gesture that the organization is fulfilling its environmental responsibility; in result employees become emotionally and psychologically attached with environmental initiatives of the organization which results in enhanced environmental performance of the organization. This finding is also in line with the findings of previous studies (Pham et al. 2020; Luu 2017; Tuan 2018, 2019; Kim et al. 2019; Gilal et al. 2019) suggesting environmental CSR practices as predictor of OCBE.

Finally, in order to get a better understanding of how CSR contributes to environmental performance of the organization, we studied the serial mediation of employees’ voluntary pro-environmental behavior and OCBE. Our data revealed that CSR practices provoke pro-environmental behaviors and employees become attached with organizational policies and initiatives aimed towards environmental sustainability; this attachment eventually results in employees’ extra-role work behaviors to achieve environmental performance of the organization. These findings resemble the findings of Pham et al. (2020), Luu (2017), and Gilal et al. (2019) suggesting that CSR significantly impacts employees’ pro-environmental behavior which in result contributes to their OCBE; in this way, they are likely to put extra efforts to achieve environmental performance of the organization.

Implications for theory

This research endeavor has made a number of theoretical and practical contributions to the growing literature on CSR and environmental management. First, this research validates SIT in domain of CSR and environmental management. According to SIT, “individuals feel pleased when they become attached to groups that have positive standing because belonging to that group helps reinforce their self-concept with regards to their association with the group” (Gilal et al. 2020, p. 2281). Consistent with this theoretical assertion, this study extends our understanding by linking employee perception of CSR to environmental performance through the mediation of employees’ voluntary pro-environmental behavior and OCBE in setting of controversial industry sectors. Specifically, our study highlighted that employees’ perception of CSR positively influences environmental performance of the organization when employees engage in pro-environmental behaviors and depicts a willingness to cooperate with their organization and coworkers to perform extra-role work behaviors to benefit natural environment. Hence, our research contributes to extension of SIT proposition by signifying that in domain of environmental management, organizations’ CSR activities can significantly enhance environmental performance in controversial industry sectors.

Extensive research has been conducted to examine the effects of organization’s CSR activities on brand passion (Gilal et al. 2020), consumer behavior (Bhattacharya and Sen 2004), organizational reputation (Fatma et al. 2015), and organizational integrity (Coulter and Coulter 2002). However, very limited efforts have been devoted to exploring the link between CSR and environmental performance. Hence, our study went one step further in exploring a new way to enhance environmental performance through organizations’ CSR activities in controversial industry sectors.

Extensive research has been carried out to explore the antecedents of employees’ pro-environmental behavior like environmental concern (Han et al. 2019), environmental responsibility (Umrani et al. 2020), and environmental passion (Gilal et al. 2019). Until now, no single study exists that adequately tests employees’ pro-environmental behavior as outcome of organization’s CSR activities and/or employees’ pro-environmental behavior as an antecedent of environmental performance. Consequently, this study contributes by linking employees’ perceptions associated with CSR activities to environmental performance of the organization via employees’ pro-environmental behavior.

Prior studies mainly focused on green HRM (Pham et al. 2020; Kim et al. 2019), green employee empowerment (Hameed et al. 2020), collective green crafting (Luu 2017), green competence building practices, motivation practices, and green employee involvement practices (Anwar et al. 2020) as antecedents of OCBE. To best of authors’

knowledge, no study has ever studied environmental performance via OCBE as an outcome of CSR in setting of controversial industry sectors. Thus, our study has contributed to literature by linking OCBE as a mediating mechanism to influence the employees’ perception of CSR on environmental performance. In this way, our research illuminates that provoking employees’ OCBE through practicing CSR activities can be a prominent source of enhancing environmental performance of organization in controversial industry sectors.

Implications for policy and practice

This study draws some important policy implications and suggestions for the top management of organizations operating in controversial industry sectors like hotels, tobacco, and oil and gas. First, our study has revealed CSR as a contemporary way to improve environmental performance. Hence, managers attempting to improve environmental performance of the organization may consider the framework of current study by designing environmental awareness campaigns using positive messages and focusing on social activities and actions, the organization is making for the betterment of the society. Considering hotel organizations who initiate CSR activities like charity meals, free cooking classes, etc., such programs develop positive perceptions about CSR activities in minds of employees. These types of activities also shape their pro-environmental behaviors and enable them to contribute to the environmental performance of the organization (Hendlin and Bialous 2020; Shahzad et al. 2020). Similarly, tobacco and oil and gas organizations may initiate CSR activities like plantation drives or promoting academic activities in local surroundings by developing schools and research facilities. It helps organizations to develop a reputation of responsible organization and gain the trust of local people and employees while contributing towards environmental sustainability (Palazzo and Richter 2005; Hirschhorn 2004).

Second, apart from employing employees’ perception of CSR to improve environmental performance, practitioners in controversial industry sectors should pay attention to provoke voluntary pro-environmental behavior and OCBE of employees, as both voluntary pro-environmental behavior and OCBE mediate employees’ perception of CSR and environmental performance of the organization. This suggests that an employees’ environmental behavior and OCBE should be strongly commensurate with organization’s CSR activities. For instance, Umrani et al. (2020) noted that an organization is considered socially and environmentally responsible when it engages in socially responsible business activities. Similarly, Cheema et al. (2020a, b) suggested that employees become emotionally and psychologically attached with organizations practicing CSR activities. Hence, if employees do not perform environment friendly behaviors and are not

showing willingness to cooperate with organization in performing tasks beyond their job responsibilities, the organization's CSR activities may not be suitable for enhancing environmental performance. Practitioners in controversial industry sectors are encouraged to promote pro-environmental behavior and OCBE by designing tailored CSR programs that help them to enhance environmental performance.

Third, this research helps organizations operating in controversial industry sectors to understand how paying social obligations by practicing CSR inducing pro-environmental behaviors among employees improves the environmental performance of these organizations. In this regard, the policy makers of hotels, tobacco, and oil and gas organizations need to instill pro-social and environmental values in their organizational strategy, devise better strategies and tools to implement CSR practices, and provide training and environmental knowledge to employees to minimize the harmful impact of their business practices on environment, leading to better environmental performance (Amara and Chen 2020).

Fourth, in order to be environmentally sustainable, hotels, tobacco, and oil and gas organizations need to create a balance between their financial and environmental performance. Given that, our research advances the knowledge of policy makers and managers of these organizations in understanding the critical role of employees' ecofriendly behaviors in minimizing the costs associated with compliance of environmental regulation to attain competitive edge and sustainable profits. Therefore, the policy makers of hotels, tobacco, and oil and gas organizations need to develop capacity of employees to understand environmental issues and depict environment friendly behaviors (Umrani et al. 2020; Gilal et al. 2019). It helps organizations operating in these industrial sectors to promote green behaviors of employees and enhance their environmental performance. It also improves their financial performance by reducing costs of compliance with environmental regulations (Kim et al. 2019; Harb and Ahmed 2019).

Limitations and future research

Even though this study contributed to CSR and environmental management literature in numerous ways, there are some limitations that could be used for future research. Firstly, the sample of our study was limited to $n = 282$ employees of three controversial industry sectors in Pakistan, and the findings may not generalize well to other countries or industry sectors. Future research using larger samples and/or additional countries and sectors may verify whether the results of this study can be generalized to other industrial sectors. Secondly, we have explored the effect of employee CSR perception on environmental performance through multiple mediations of pro-environmental behavior and OCBE. The explanatory power of the current research model may be enhanced by studying

other mediators like environmental concerns, satisfaction of employee autonomy, and environmental responsibility. Thirdly, organizational management literature suggests that there exists a significant gender difference in individual CSR perceptions and organizational behavior. Hence, we invite future researchers to explore the moderating role of gender in relationship between employee CSR perception and environmental performance through the meditation of pro-environmental behavior and OCBE.

Authors' contribution All authors contributed to the study conception and design. Gian Luca Casali supervised the project and provided his feedback and expert opinion at various levels of the study. Material preparation, data collection, and analysis were performed by Nisar Ahmed Channa, Tahir Hussain, and Rabail Aisha. The first draft of the manuscript was written by Nisar Ahmed Channa, and Gian Luca Casali commented on previous versions of the manuscript. Sarfraz Ahmed Dakhan provided his feedback to improve the second draft. Finally, all authors read and approved the final version of the manuscript.

Data availability The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to the information that could compromise the privacy of research participants.

Compliance with ethical standards

Competing interests The authors declare that they have no competing interests.

Ethical approval The ethical approval to conduct this research was obtained from the Office of Research Innovation and Commercialization (ORIC) of the Sukkur IBA University.

Consent to participate The consent to participate in research was obtained from the research participants.

Consent to publish Not applicable.

References

- Afsar B, Umrani WA (2020) Corporate social responsibility and pro-environmental behavior at workplace: the role of moral reflectiveness, coworker advocacy, and environmental commitment. *Corp Soc Responsib Environ Manag* 27(1):109–125
- Afsar B, Cheema S, Javed F (2018) Activating employee's pro-environmental behaviors: the role of CSR, organizational identification, and environmentally specific servant leadership. *Corp Soc Responsib Environ Manag* 25(5):904–911
- Al-Abdin A, Roy T, Nicholson JD (2018) Researching corporate social responsibility in the Middle East: the current state and future directions. *Corp Soc Responsib Environ Manag* 25(1):47–65
- Amara DB, Chen H (2020) A mediation-moderation model of environmental and eco-innovation orientation for sustainable business growth. *Environ Sci Pollut Res* 27:16916–16928
- Anderson JC, Gerbing DW (1988) Structural equation modeling in practice: a review and recommended two-step approach. *Psychol Bull* 103(3):411–423

- Anser MK, Yousaf Z, Majid A, Yasir M (2020a) Does corporate social responsibility commitment and participation predict environmental and social performance? *Corp Soc Responsib Environ Manag* 27: 2578–2587
- Anser MK, Yousaf Z, Usman B, Nassani AA, Abro MMQ, Zaman K (2020b) Management of water, energy, and food resources: go for green policies. *J Clean Prod* 251:119662
- Anwar N, Mahmood NHN, Yusliza MY, Ramayah T, Faezah JN, Khalid W (2020) Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *J Clean Prod* 256:120401
- Aragón-Correa JA, Hurtado-Torres N, Sharma S, García-Morales VJ (2008) Environmental strategy and performance in small firms: a resource-based perspective. *J Environ Manag* 86(1):88–103
- Ardito L, Dangelico RM (2018) Firm environmental performance under scrutiny: the role of strategic and organizational orientations. *Corp Soc Responsib Environ Manag* 25(4):426–440
- Araud A, Sekerka LE (2010) Positively ethical: the establishment of innovation in support of sustainability. *Int J Sust Strat Manag* 2(2): 121–137
- Asadi S, Pourhashemi SO, Nilashi M, Abdullah R, Samad S, Yadegaridehkordi E et al (2020) Investigating influence of green innovation on sustainability performance: a case on Malaysian hotel industry. *J Clean Prod* 258:120860
- Ashforth BE, Mael F (1989) Social identity theory and the organization. *Acad Manag Rev* 14(1):20–39
- Babiak K, Trendafilova S (2011) CSR and environmental responsibility: motives and pressures to adopt green management practices. *Corp Soc Responsib Environ Manag* 18(1):11–24
- Bagozzi RP, Yi Y, Phillips LW (1991) Assessing construct validity in organizational research. *Adm Sci Q* 36:421–458
- Baker WE, Sinkula JM (2005) Environmental marketing strategy and firm performance: effects on new product performance and market share. *J Acad Mark Sci* 33(4):461–475
- Beaudoin CA, Cianci AM, Hannah ST, Tsakumis GT (2019) Bolstering managers' resistance to temptation via the firm's commitment to corporate social responsibility. *J Bus Ethics* 157(2):303–318
- Bhattacharya CB, Sen S (2004) Doing better at doing good: when, why, and how consumers respond to corporate social initiatives. *Calif Manag Rev* 47(1):9–24
- Bock RD, Bargmann RE (1966) Analysis of covariance structures. *Psychometrika* 31(4):507–534
- Bohdanowicz P (2005) European hoteliers' environmental attitudes: greening the business. *Cornell Hotel Restaur Admin Q* 46(2):188–204
- Boiral O (2009) Greening the corporation through organizational citizenship behaviors. *J Bus Ethics* 87(2):221–236
- Boiral O, Paillé P (2012) Organizational citizenship behaviour for the environment: measurement and validation. *J Bus Ethics* 109(4): 431–445
- Boiral O, Talbot D, Paillé P (2015) Leading by example: a model of organizational citizenship behavior for the environment. *Bus Strateg Environ* 24(6):532–550
- Brewer GD, Stern PC (eds) (2005) Decision making for the environment: Social and behavioral science research priorities. National Academies Press, Washington, DC, p 33
- Bruns-Smith A, Choy V, Chong H, Verma R (2015) Environmental sustainability in the hospitality industry: Best practices, guest participation, and customer satisfaction. <http://scholarship.sha.cornell.edu/cgi/viewcontent.cgi?article=1199&context=chrpubs>
- Byrne BM, Van de Vijver FJ (2010) Testing for measurement and structural equivalence in large-scale cross-cultural studies: addressing the issue of nonequivalence. *Int J Test* 10(2):107–132
- Cai Y, Jo H, Pan C (2012) Doing well while doing bad? CSR in controversial industry sectors. *J Bus Ethics* 108(4):467–480
- Cavaco S, Crifo P (2014) CSR and financial performance: complementarity between environmental, social and business behaviours. *Appl Econ* 46(27):3323–3338
- Channa NA, Bhutto MH, Bhutto M, Bhutto NA, Tariq B (2020) Capturing customer's store loyalty through relationship benefits: moderating effect of retail innovation. *Eur Bus Rev*. <https://doi.org/10.1108/EBR-09-2019-0179>
- Cheema S, Afsar B, Javed F (2020a) Employees' corporate social responsibility perceptions and organizational citizenship behaviors for the environment: the mediating roles of organizational identification and environmental orientation fit. *Corp Soc Responsib Environ Manag* 27(1):9–21
- Cheema S, Afsar B, Al-Ghazali BM, Maqsoom A (2020b) How employee's perceived corporate social responsibility affects employee's pro-environmental behaviour? The influence of organizational identification, corporate entrepreneurship, and environmental consciousness. *Corp Soc Responsib Environ Manag* 27(2):616–629
- Chin WW (1998) The partial least squares approach to structural equation modeling. *Mod Methods Bus Res* 295(2):295–336
- Chuang SP, Huang SJ (2018) The effect of environmental corporate social responsibility on EP and business competitiveness: the mediation of green information technology capital. *J Bus Ethics* 150(4): 991–1009
- Coulter KS, Coulter RA (2002) Determinants of trust in a service provider: the moderating role of length of relationship. *J Serv Mark* 16(1): 33–50
- Daily BF, Bishop JW, Govindarajulu N (2009a) A conceptual model for organizational citizenship behavior directed toward the environment. *Bus Soc* 48(2):243–256
- Daily GC, Polasky S, Goldstein J, Kareiva PM, Mooney HA, Pejchar L, Ricketts TH, Salzman J, Shallenberger R (2009b) Ecosystem services in decision making: time to deliver. *Front Ecol Environ* 7(1): 21–28
- Dumont J, Shen J, Deng X (2017) Effects of green HRM practices on employee workplace green behavior: the role of psychological green climate and employee green values. *Hum Resour Manag* 56(4):613–627
- Falk RF, Miller NB (1992) A primer for soft modeling. University of Akron Press, Akron
- Fatma M, Rahman Z, Khan I (2015) Building company reputation and brand equity through CSR: the mediating role of trust. *Int J Bank Mark* 33(6):840–856
- Fornell C, Larcker DF (1981) Evaluating structural equation models with unobservable variables and measurement error. *J Mark Res* 18(1): 39–50
- Fraj-Andrés E, Martínez-Salinas E, Matute-Vallejo J (2009) Factors affecting corporate environmental strategy in Spanish industrial firms. *Bus Strateg Environ* 18(8):500–514
- Gao YL, Mattila AS, Lee S (2016) A meta-analysis of behavioral intentions for environment-friendly initiatives in hospitality research. *Int J Hosp Manag* 54:107–115
- Gefen D, Straub D, Boudreau MC (2000) Structural equation modeling and regression: guidelines for research practice. *Commun Assoc Inf Syst* 4(1):7
- Gilal FG, Ashraf Z, Gilal NG, Gilal RG, Channa NA (2019) Promoting environmental performance through green human resource management practices in higher education institutions: a moderated mediation model. *Corp Soc Responsib Environ Manag* 26(6):1579–1590
- Gilal FG, Channa NA, Gilal NG, Gilal RG, Gong Z, Zhang N (2020) Corporate social responsibility and brand passion among consumers: theory and evidence. *Corp Soc Responsib Environ Manag* 27:2275–2285
- Gilmour MI, Jaakkola MS, London SJ, Nel AE, Rogers CA (2006) How exposure to environmental tobacco smoke, outdoor air pollutants, and increased pollen burdens influences the incidence of asthma. *Environ Health Perspect* 114(4):627–633

- Glavas A, Kelley K (2014) The effects of perceived corporate social responsibility on employee attitudes. *Bus Ethics Q* 24(2):165–202
- Glavas A, Piderit SK (2009) How does doing good matter. *J Corp Citizsh* 36(3):51–70
- Gössling S, Peeters P, Ceron JP, Dubois G, Patterson T, Richardson RB (2005) The eco-efficiency of tourism. *Ecol Econ* 54(4):417–434
- Haenlein M, Kaplan AM (2004) A beginner's guide to partial least squares analysis. *Underst Stat* 3(4):283–297
- Hair JF Jr, Sarstedt M, Hopkins L, Kuppelwieser VG (2014) Partial least squares structural equation modeling (PLS-SEM). *Eur Bus Rev* 26(2):106–121
- Hair JF Jr, Sarstedt M, Matthews LM, Ringle CM (2016) Identifying and treating unobserved heterogeneity with FIMIX-PLS: part I—method. *Eur Bus Rev* 28(1):63–76
- Hair JF, Ringle CM, Sarstedt M (2013) Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *Long Range Plan* 46(1–2):1–12
- Hameed Z, Khan IU, Islam T, Sheikh Z, Naeem RM (2020) Do green HRM practices influence employees' environmental performance? *Int J Manpow* 41:1061–1079
- Han H, Moon H, Hyun SS (2019) Uncovering the determinants of pro-environmental consumption for green hotels and green restaurants. *Int J Contemp Hosp Manag*
- Harb THADN, Ahmed S (2019) Perceived financial sustainability of tourism enterprises: do green human resource management practices really matter? *J Tourism Hospit Manag* 7(2):173–185
- Helfaya A, Moussa T (2017) Do board's corporate social responsibility strategy and orientation influence environmental sustainability disclosure? UK evidence. *Bus Strateg Environ* 26(8):1061–1077
- Hendlin YH, Bialous SA (2020) The environmental externalities of tobacco manufacturing: a review of tobacco industry reporting. *Ambio* 49(1):17–34
- Henseler J, Ringle CM, Sarstedt M (2015) A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J Acad Mark Sci* 43(1):115–135
- Henseler J, Ringle CM, Sinkovics RR (2009) The use of partial least squares path modeling in international marketing. In *New challenges to international marketing*. Emerald Group Publishing Limited, Bingley, pp 277–319
- Hericher C, Raineri N, Mejia J (2017) Paillé P (2017) Environmental CSR as determinant for OCBE through anticipated guilt: a deontic perspective. *Academy of Management Proceedings* 1:5964
- Hirschhorn N (2004) Corporate social responsibility and the tobacco industry: hope or hype? *Tob Control* 13(4):447–453
- Islam T, Ali G, Asad H (2019) Environmental CSR and pro-environmental behaviors to reduce environmental dilapidation. *Manag Res Rev* 42(3):332–351
- Jiang K, Lepak DP, Hu J, Baer JC (2012) How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Acad Manag J* 55(6):1264–1294
- Jin KG, Drozdenko R, DeLoughy S (2013) The role of corporate value clusters in ethics, social responsibility, and performance: a study of financial professionals and implications for the financial meltdown. *J Bus Ethics* 112(1):15–24
- Jones DA (2010) Does serving the community also serve the company? Using organizational identification and social exchange theories to understand employee responses to a volunteerism programme. *J Occup Organ Psychol* 83(4):857–878
- Kim YJ, Kim WG, Choi HM, Phetvaroon K (2019) The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *Int J Hosp Manag* 76:83–93
- Kohtala C (2015) Addressing sustainability in research on distributed production: an integrated literature review. *J Clean Prod* 106:654–668
- Kraus S, Rehman SU, García FJS (2020) Corporate social responsibility and environmental performance: the mediating role of environmental strategy and green innovation. *Technol Forecast Soc Chang* 160:120262
- Lamm E, Tosti-Kharas J, Williams EG (2013) Read this article, but don't print it: organizational citizenship behavior toward the environment. *Group Org Manag* 38(2):163–197
- Lin CP, Lyau NM, Tsai YH, Chen WY, Chiu CK (2010) Modeling corporate citizenship and its relationship with organizational citizenship behaviors. *J Bus Ethics* 95(3):357–372
- Luu TT (2017) CSR and organizational citizenship behavior for the environment in hotel industry. *Int J Contemp Hosp Manag*
- Ma X, Jiang P, Jiang Q (2020) Research and application of association rule algorithm and an optimized grey model in carbon emissions forecasting. *Technol Forecast Soc Chang* 158:120159
- Madueno JH, Jorge ML, Conesa IM, Martínez-Martínez D (2016) Relationship between corporate social responsibility and competitive performance in Spanish SMEs: empirical evidence from a stakeholders' perspective. *BRQ Bus Res Q* 19(1):55–72
- Mårtensson K, Westerberg K (2016) Corporate environmental strategies towards sustainable development. *Bus Strateg Environ* 25(1):1–9
- Melay I, O'Dwyer M, Kraus S, Gast J (2017) Green entrepreneurship in SMEs: a configuration approach. *Int J Entrep Ventur* 9(1):1–17
- Messersmith JG, Patel PC, Lepak DP, Gould-Williams JS (2011) Unlocking the black box: exploring the link between high-performance work systems and performance. *J Appl Psychol* 96(6):1105–1118
- Mohammad F (2014) Emerging green technologies and environment friendly products for sustainable textiles. In: *Roadmap to sustainable textiles and clothing*. Springer, Singapore, pp 63–82
- Molina-Azorín JF, Tari JJ, Pereira-Moliner J, Lopez-Gamero MD, Pertusa-Ortega EM (2015) The effects of quality and environmental management on competitive advantage: a mixed methods study in the hotel industry. *Tour Manag* 50:41–54
- Montabon F, Morrow PC, Cantor DE (2016) Promoting environmental citizenship behaviour. *Int J Int Supply Manag* 10(1):63–88
- Norton TA, Parker SL, Zacher H, Ashkanasy NM (2015) Employee green behavior: a theoretical framework, multilevel review, and future research agenda. *Organ Environ* 28(1):103–125
- Novotny TE, Bialous SA, Burt L, Curtis C, Costa VLD, Iqtidar SU et al (2015) The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption. *Bull World Health Organ* 93:877–880
- Nyame-Asiamah F, Ghulam S (2019) The relationship between CSR activity and sales growth in the UK retailing sector. *Soc Respons J* 16(3):387–401
- Organ DW (1988) *Organizational citizenship behavior: the good soldier syndrome*. Lexington Books/DC Heath and Com
- Paillé P, Chen Y, Boiral O, Jin J (2014) The impact of human resource management on environmental performance: an employee-level study. *J Bus Ethics* 121(3):451–466
- Palazzo G, Richter U (2005) CSR business as usual? The case of the tobacco industry. *J Bus Ethics* 61(4):387–401
- Pham NT, Thanh TV, Tučková Z, Thuy VTN (2020) The role of green human resource management in driving hotel's environmental performance: interaction and mediation analysis. *Int J Hosp Manag* 88:102392
- Poolthong Y, Mandhachitara R (2009) Customer expectations of CSR, perceived service quality and brand effect in Thai retail banking. *Int J Bank Mark* 27(6):408–427
- Ramus CA, Killmer AB (2007) Corporate greening through prosocial extrarole behaviours—a conceptual framework for employee motivation. *Bus Strateg Environ* 16(8):554–570
- Ringle C, Da Silva D, Bido D, (2015) Structural equation modeling with the SmartPLS. Bido D, da Silva D, Ringle C, (2014) Structural

- Equation Modeling with the Smartpls. *Brazilian Journal Of Marketing* 13(2):56–73
- Rivera JM, Muñoz MJ, Moneva JM (2017) Revisiting the relationship between corporate stakeholder commitment and social and financial performance. *Sustain Dev* 25(6):482–494
- Robertson JL, Barling J (2013) Greening organizations through leaders' influence on employees' pro-environmental behaviors. *J Organ Behav* 34(2):176–194
- Roy MJ, Boiral O, Lagace D (2001) Environmental commitment and manufacturing excellence: a comparative study within Canadian industry. *Bus Strateg Environ* 10(5):257–268
- Rupp DE, Mallory DB (2015) Corporate social responsibility: psychological, person-centric, and progressing. *Annu Rev Organ Psych Organ Behav* 2(1):211–236
- Rupp DE, Wright PM, Aryee S, Luo Y (2015) Organizational justice, behavioral ethics, and corporate social responsibility: finally the three shall merge. *Manag Organ Rev* 11(1):15–24
- Sarkar R (2008) Public policy and corporate environmental behaviour: a broader view. *Corp Soc Responsib Environ Manag* 15(5):281–297
- Shahzad M, Qu Y, Javed SA, Zafar AU, Rehman SU (2020) Relation of environment sustainability to CSR and green innovation: a case of Pakistani manufacturing industry. *J Clean Prod* 253:119938
- Sidhoum AA, Serra T (2017) Corporate social responsibility and dimensions of performance: an application to US electric utilities. *Util Policy* 48:1–11
- Singh SK, Del Giudice M, Chierici R, Graziano D (2020) Green innovation and environmental performance: the role of green transformational leadership and green human resource management. *Technol Forecast Soc Chang* 150:119762
- Srivastava AP, Dhar RL (2016) Impact of leader member exchange, human resource management practices and psychological empowerment on extra role performances. *Int J Product Perform Manag* 66(3):351–377
- Suganthi L (2019) Examining the relationship between corporate social responsibility, performance, employees' pro-environmental behavior at work with green practices as mediator. *J Clean Prod* 232:739–750
- Suganthi L (2020) Investigating the relationship between corporate social responsibility and market, cost and environmental performance for sustainable business. *S Afr J Busi Manag* 51(1):13
- Tian Q, Robertson JL (2019) How and when does perceived CSR affect employees' engagement in voluntary pro-environmental behavior? *J Bus Ethics* 155(2):399–412
- Tomomi T (2010) Environmental management strategy for small and medium-sized enterprises: why do SMBs practice environmental management? *Asian Bus Manag* 9(2):265–280
- Tuan LT (2018) Activating tourists' citizenship behavior for the environment: the roles of CSR and frontline employees' citizenship behavior for the environment. *J Sustain Tour* 26(7):1178–1203
- Tuan LT (2019) Catalyzing employee OCBE in tour companies: the role of environmentally specific charismatic leadership and organizational justice for pro-environmental behaviors. *J Hosp Tour Res* 43:682–711
- Turker D (2009) Measuring corporate social responsibility: a scale development study. *J Bus Ethics* 85(4):411–427
- Tyteca D (1996) On the measurement of the environmental performance of firms—a literature review and a productive efficiency perspective. *J Environ Manag* 46(3):281–308
- Umrani WA, Channa NA, Yousaf A, Ahmed U, Pahi MH, Ramayah T (2020) Greening the workforce to achieve environmental performance in hotel industry: a serial mediation model. *J Hosp Tour Manag* 44:50–60
- Vallaster C (2017) Managing a company crisis through strategic corporate social responsibility: a practice-based analysis. *Corp Soc Responsib Environ Manag* 24(6):509–523
- Vallaster C, Kraus S, Kailer N, Baldwin B (2019) Responsible entrepreneurship: outlining the contingencies. *Int J Entrep Behav Res* 25(3):538–553
- Van der Werff E, Steg L, Keizer K (2013) The value of environmental self-identity: the relationship between biospheric values, environmental self-identity and environmental preferences, intentions and behaviour. *J Environ Psychol* 34:55–63
- Wah Yap B, Ramayah T, Shahidan WNW (2012) Satisfaction and trust on customer loyalty: a PLS approach. *Bus Strat Ser* 13(4):154–167
- Wang H, Qian C (2011) Corporate philanthropy and corporate financial performance: the roles of stakeholder response and political access. *Acad Manag J* 54(6):1159–1181
- World Health Organization (2017a) Tobacco and its environmental impact: an overview. WHO, Geneva
- World Health Organization (2017b) WHO report on the global tobacco epidemic, 2017: monitoring tobacco use and prevention policies. WHO, Geneva
- Wu T, Kung CC (2020) Carbon emissions, technology upgradation and financing risk of the green supply chain competition. *Technol Forecast Soc Chang* 152:119884
- Yadav R, Pathak GS (2017) Determinants of consumers' green purchase behavior in a developing nation: applying and extending the theory of planned behavior. *Ecol Econ* 134:114–122
- Yu W, Ramanathan R, Nath P (2017) Environmental pressures and performance: an analysis of the roles of environmental innovation strategy and marketing capability. *Technol Forecast Soc Chang* 117:160–169
- Zientara P, Zamojska A (2018) Green organizational climates and employee pro-environmental behaviour in the hotel industry. *J Sustain Tour* 26(7):1142–1159

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.