



Article The Role of CSR for De-Carbonization of Hospitality Sector through Employees: A Leadership Perspective

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Abstract: Tourism and hospitality have been recognized as leading economic sectors globally. Before the outbreak of COVID-19, it was estimated that the tourism and hospitality sector was growing by around 4% each year. Although the economic-efficiency-led hypothesis of the tourism and hospitality sector is strong, there is another perspective related to tourism and hospitality. That is, tourism and hospitality are not as "green" as they were supposed to be. Indeed, this sector is known for its outsized carbon footprint. It is estimated that, if not managed efficiently, the GHG contribution of the tourism sector will grow in the future. Specifically, the hotel business accounts for 1% of total global greenhouse gas emissions (GHG), which is huge. Responding to these significant issues, this study investigates the relationship between the corporate social responsibility (CSR) activities of a hotel enterprise and employees' pro-environmental behavior (PEB). The mediating role of environmental-specific transformational leadership (ESTFL) and the moderating role of green perceived organizational support (GPOS) were also tested in the above relationship. The data were collected by the employees through a self-administered questionnaire. The hypothesized relations were statistically investigated by using structural equation modeling (SEM). The findings revealed that CSR activities of a hotel not only influence employees' PEB directly, but the mediating role of ESTFL was also significant. At the same time, the conditional indirect role of GPOS was also confirmed. This study offers different theoretical and practical insights, which have been discussed in detail.

Keywords: CSR; sustainability; tourism and hospitality; de-carbonization; leadership

1. Introduction

Tourism and hospitality have emerged as leading economic sectors globally. According to a report, around one billion tourists travel each year to an international destination [1]. Before the outbreak of the COVID-19 pandemic, based on trends and economic growth in the global tourism and hospitality sector, the United Nations World Tourism Organization (UNWTO) estimated that the tourism sector was likely to grow by around 4% each year [2]. Tourism and hospitality are considered critical from an economic perspective because, on the one hand, a country can enhance its foreign reserves, and, on the other hand, tourism and hospitality provide direct and indirect jobs to the ranks and files in a country. Not only



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Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). are tourism and hospitality related to the economic health of an economy, but they can be related to other sectors of an economy, including agriculture, building, transportation, and entertainment [3]. The travel, tourism, and hospitality sectors were estimated to contribute around five trillion USD globally in 2020 [4]. Indeed, before the COVID-19 pandemic, travel, tourism, and hospitality contributed 10.4% to the world's GDP [5]. Specifically, the hospitality sector grew significantly worldwide during the past two decades as international arrivals doubled in 2016 (from 600 million to 1.4 billion) [6].

Although the economic-efficiency-led hypothesis of the tourism and hospitality sector is strong, there is another perspective related to tourism and hospitality. That is, tourism and hospitality are not as "green" as they were supposed to be. Indeed, this sector is known for its outsized carbon footprint [7]. Recent studies have documented that tourism contributes to around 8% of global greenhouse gas (GHG) emissions [8,9]. Especially, GHG from air transportation to different tourist places is huge. In this respect, Dorta Antequera et al. [10] showed that the GHG from the Canary Islands alone contributes more than 50% of the total air transport GHG. It is estimated that, if not managed efficiently, the GHG contribution of the tourism sector will grow in the future.

Specifically, hotel businesses account for 1% of total global GHG, which is huge [11]. More specifically, it was highlighted that hotel enterprises must take the necessary steps to mitigate their carbon emission by 66% by 2030 and by 90% by 2050 to ensure that the growth and development in this sector will not drive a corresponding increase in carbon emission [12]. It is well discussed at different levels that tourism and hospitality must align with the United Nations' sustainable development goals. This implies that this sector should follow a three bottom-line sustainability philosophy (people, planet, and profit). From this perspective, one of the greatest challenges the tourism and hospitality sector faces is "how to maintain growth and developmental pace without undermining the environment".

Climate data shows that sustainable behavior at the level of individuals can help a nation towards de-carbonization. In this vein, the latest UN report indicates that sustainable behavior at an individual level can significantly improve the environmental footprint of a nation [13]. The literature calls this sustainable behavior of individuals as pro-environmental behavior (PEB). Kollmuss and Agyeman [14] defined PEB as one's intentions to act in a way that produces no or minimal harm to the environment or biosphere. For example, from the perspective of employees, they show eco-friendly behavior in a workplace by printing double sides of the paper, using less electricity, preferring re-useable utensils instead of disposable utensils, or using stairs instead of electronic escalators. In an enterprise context, the importance of PEB at the level of employees has been discussed at different levels in the prior literature [15–17]. However, the PEB of employees in a hospitality context, especially in a developing economy perspective, was less emphasized previously. Similarly, what drives employees' PEB is another thing that has not yet been decided, as no universal consensus exists to date. Responding to such knowledge gaps, this study intends to investigate the critical factors that drive employees' PEB in the hospitality sector in the context of a developing economy.

The literature indicates that employees' corporate social responsibility (CSR) perceptions can positively influence their behavior [18]. For example, a bunch of social scientists specified the relationship between CSR and employees' corporate citizenship behavior. Even in a hospitality context, we can refer to the studies of Luu [19] and Bavik [20]. Similarly, other hospitality examples of employees' behavior in a CSR framework include employee creativity [21,22] and employee commitment [23,24]. Even though CSR's critical role in influencing employees' behavior was mentioned in the literature, the relationship between employees' CSR perceptions and their PEB in the hospitality context remained an understudied area. Some recent researchers investigated the above relationship [25,26]. Still, such a sparse explanation is insufficient to advance the field. Therefore, one of the basic aims of this study is to investigate the relationship between the CSR perceptions of employees and their PEB in a hospitality context.

Another organizational factor that significantly impacts employee behavior is leadership style [27–30]. In an organizational context, corporate leaders are the people who shape the behavior of followers (employees) by providing them with the needed support and resources to perform their job. The literature on leadership identifies several leadership styles, for example, inclusive leadership, servant leadership, transactional leadership, and transformational leadership. Perhaps transformational leadership received more attention from scholars than others among these leadership styles. Given that transformational leadership is a combination of democratic, affiliative, and visionary leadership, this style is central to developing strong employee engagement [31]. However, a recent literature review indicates a shift in contemporary scholars' approach toward the transformational leadership style. That is, despite focusing on the general aspect of a transformational leader in a workplace, some scholars have started to focus on a target-specific effect of a transformational leader. Barling et al. [32] were the first ones who brought this targetspecific role of a transformational leader into academic discussion. Since then, various target-specific interventions of transformational leadership have been discussed in the leadership literature [33,34]. Some recent studies discussed the mediating role of leadership style in influencing employee behavior [35,36]. However, a transformational leader's environmental-specific (target-specific) role in influencing employees' PEB was less emphasized previously. Specifically, the mediating role of environmental-specific transformational leadership to influence employees' PEB in a CSR framework from the perspective of hospitality remained an under-explored area. Thus, this study tends to advance the discussion on leadership by investigating the mediating role of environmental-specific transformational leadership between CSR and PEB in a hospitality context.

Another objective of this study is to explore the moderating effect of green perceived organizational support (GPOS) between the mediated relationship of CSR and PEB through environmental-specific transformational leadership (ESTFL). GPOS is referred to as an employee's belief in how the enterprise cares about his or her environmental contribution for sustainability and for his or her well-being [37]. Hur et al. [38] specified the importance of the moderating role of POS in a CSR framework to influence employees' behavior. Buttressing this, we feel it is important to investigate the moderating role of GPOS because it can specify the extent to which employees are motivated to be engaged in different sustainable practices as an outcome of CSR. Moreover, the early researchers have also indicated that employees willfully contribute to an organization that cares about its employees' well-being while they partake in different sustainability initiatives [39].

Altogether, this study attempts to fill the knowledge gaps in the available literature in the following ways. First, this study advances the sustainability debate by highlighting the important role of employees in a hospitality context that has not been emphasized much previously. Second, this study tends to enrich the CSR and organizational management literature by taking into consideration the mediating and moderating role of ESTFL and GPOS simultaneously in a unified model, which according to the best of our knowledge, has not been tested earlier, at least in a hospitality context. Lastly, this study is one of those few studies that take into consideration the target-specific (environmental-specific) approach of transformational leadership to reduce the carbon footprint of a certain enterprise. In this vein, the role of transformational leadership was already discussed. Still, unlike the bulk of the previous literature, which focused on the general role of transformational leadership, this study employs a target-specific approach.

2. Literature

Drawing upon social identity theory (SIT), which argues that individuals' identification is significantly shaped by the way in which they interact with others in different social contexts. Originally, this theory was associated with Tajfel [40]. However, the intervention of this theory in an organizational context was proposed by Ashforth and Mael [41]. Since then, a plethora of social scientists has considered this theory appropriate to explain why individuals are engaged in different workplace behavior in a social context (the organization in the current sense). Even from a CSR perspective, prior researchers have extensively used this theory to explain individual behavior [42–45]. We, in this regard, contend that employees develop a positive feeling of sense-making about their organization due to its CSR activities, which then influence their attitude and behavior. Indeed, due to the socially responsible behavior of an organization, employees feel proud to be a part of such an ethical organization and wish not only to maintain its positive image but also to go the extra mile to improve it further [38]. Further, in the process of sense-making, as an outcome of CSR, employees are expected to associate themselves with an ethical organization emotionally and cognitively, which ultimately urges them to behave pro-socially [46]. Altogether, CSR perceptions of employees about their ethical organization motivate them for positive social change, leading them to build a better workplace relationship with their organization. All of this process ultimately motivates them to act in a way that improves the overall image of the social group with which they identify themselves. Hence, they are expected to engage in different PEB behaviors.

The positive relationship between CSR perception of employees and their PEB has been established in the literature at different levels and contexts [35,47]. Vlachos et al. [48] argued that employees positively evaluate the CSR activities of an ethical organization, which then drives their extra-role behavior (PEB is also an extra-role behavior). Specifically, it was argued in the available literature that employees' CSR perceptions of an organization develop positive feelings in them, and they feel proud to identify themselves with a socially responsible organization [49,50]. More specifically, when they see that their ethical organization shows extra commitment to preserve nature, the community, and the biosphere, they are expected to become self-responsible and engage themselves with such workplace activities that support the sustainability initiatives of an organization under CSR [17,51]. For example, they consume less electricity (switching off unnecessary lights, not using heating and cooling devices), water conservation, printing double sides of paper, or not taking unnecessary prints are a few examples of employees' PEB in an organizational context. Moreover, an ethical organization shows a caring attitude for the well-being of all stakeholders. Employees are also important stakeholders, and when they receive different social benefits from their organization under the umbrella of CSR, they are expected to support their organization by showing extra commitment [52,53]. Further, by referring to SIT, the strong identification of employees with their organization due to its ethical commitment guides them to put forth every effort that can enhance the overall group image. In the current context, as an ethical organization shows a strong orientation for environmental management, the sense-making process of employees helps them to work in a manner that improves the sustainability image of their organization. Thus, they are expected to be engaged in environmentally friendly behaviors. Therefore, we propose the following hypothesis.

Hypothesis 1 (H1). CSR perceptions of employees of an ethical organization can enhance their PEB.

The importance of an effective leadership style to achieve organizational objectives has been well emphasized in the prior literature [54,55]. The literature also mentions that different organizational factors influence corporate leaders in a workplace context [56,57]. It was also specified that in an ethical workplace, corporate leaders show greater commitment to perform well [58]. Ethical organizations treat their leaders as valued organizational assets and show a caring concern for their well-being. Perhaps this is why corporate leaders working in an ethical organization put extra effort into helping their organization in achieving different objectives [59,60]. Prior studies show a positive association between CSR and leadership [61,62]. Specifically, the transformational style of leadership is central in a socially responsible enterprise. A transformational leader, especially ESTFL, not only supports an enterprise in achieving its sustainability objectives, he or she also communicates the environmental commitment of such an enterprise to their followers [63]. Although a transformational leader with a concern for the environment shows a considerable com-

mitment to sustainability, it is expected when such leaders work in an ethical enterprise that gives preference to environmental sustainability; they show an enhanced level of commitment to preserve nature and the environment. Therefore, it may be proposed:

Hypothesis 2 (H2). *The socially responsible commitment of an organization has a positive relationship with ESTFL.*

In an organizational context, leaders are the people who can meaningfully influence employees' behavior in several ways [64,65]. Specifically, the role of a transformational leader in influencing employees' behavior was highlighted by a bunch of prior studies [66,67]. More specifically, ESTFL has been associated with employees' PEB [68]. Referring to the definition of To et al. [69], this study defines transformational leadership as a leadership style in which a corporate leader tends to motivate and inspire his/her followers to achieve different goals by transforming their attitudes, values, beliefs, and behaviors. Compared to other styles of leadership, especially from the perspective of transactional leadership, whose central focus is on performance through extrinsic motivation (reward or punishment), a transformational leader uses charisma and inspiration to motivate followers with a shared vision [70]. From an environmental perspective, an ESTFL emphasizes long-term sustainable organization and social development [71]. Further, an ESTFL tends to integrate individual and organizational environmental values and internalize organizational tasks into individual self-driven environmental behaviors [72]. A transformational leader with an environmental orientation prioritizes sustainability concerns in crafting different organizational strategies. Employees learn this environmental orientation from their leaders, which eventually increases their PEB [73,74]. Specifically, a transformational leader with strong environmental values can influence the behavior of followers toward the environment by communicating with them that their environmentally friendly behavior can improve the environmental footprint of their organization [75]. Similarly, ESTFL establishes a closer relationship with followers by exhibiting individualized consideration and thus transmits their environmental values to followers, which ultimately influences their PEB. Saleem et al. [76] showed that a transformational leader is one who can enhance employees' PEB by elevating their intrinsic motivation level. Deng et al. [63] referred to the process of social learning, which motivates the followers to learn environmental preferences from their transformational leader in an organization. A transformational leader with an environmental orientation shows a greater preference to stick tight to environmental standards while deciding about different operational activities in an organization. Moreover, ESTFL clarifies to the employees that economic efficiency should not be preferred over environmental issues. Essentially, the same environmental concern is at the heart of an ethical organization that desires to reduce environmental crises through its eco-friendly initiatives. Put simply, a CSR-oriented organization gives preference to following environmentally friendly strategies for which the role of leadership is critical. Because corporate leaders work as a bridge between the organization and employees [58], hence the presence of ESTFL is expected to better explain the relationship between CSR and employees' PEB. Therefore,

Hypothesis 3 (H3). *ESTFL can spur the PEB of employees in an organization.*

Hypothesis 4 (H4). *ESTFL is expected to mediate the relationship between CSR and the PEB of employees.*

Employees serving in a socially responsible organization have a strong belief that their ethical organization values their contribution to its success [77]. Such beliefs, which also include employees' perceptions that their organization provides them with a supportive environment, are critical for them to draw meaning with respect to the contextual aspect of their organization [78]. Employees' POS feelings motivate them to support their organization in achieving different objectives. Further, POS on the part of employees guide them to develop positive feelings; for example, they believe if they contribute positively to

the overall performance of their organization, the organization, in response, will reward them [79]. Specifically, a socially responsible organization with environmental values provides employees with the feelings of GPOS. Employees feel that if they contribute to the environmental efficiency of their organization, such contributions will be evaluated positively by the management [80]. The work of Shoss et al. [81] indicates that POS plays a critical role for an organization to successfully implement different policies through employees. A transformational leader with environmental values influences the followers to act pro-environmentally. When an ethical organization provides a supportive environment to the employees with respect to environmental efficiency in the form of corporate leaders, employees are further elevated to be engaged in different pro-social roles [82]. In a nutshell, we expect that the GPOS of an ethical organization can produce a conditional indirect effect between the mediated relationship of CSR and employees' PEB via ESTFL. Therefore, we propose the following hypothesis:

Hypothesis 5 (H5). *GPOS moderates the indirect relationship between CSR and employees' PEB through ESTFL.*

3. Methods

3.1. Target Sector, Sample, and Procedure

We selected the hotel industry of Pakistan, which is a developing nation in South Asia. The south Asian nation has emerged as an important investment destination in recent years. This is why the tourism and hospitality sector has been flourishing in the country. Different national and international hotel chains operate in Pakistan, including Nishat, Faletti's, Monal, Serena, Avari, Marriot, and Pearl Continental; these are a few leading examples in the hotel industry of Pakistan. According to a survey, the tourism and hospitality sector has a multi-billion-dollar net worth as of 2020, it was estimated that this sector has a worth of almost 20 billion US dollars [83]. It is estimated that the growth and development in this sector will rise further in the coming years. Indeed, it is worthwhile to note that the compound annual growth rate (CAGR) in the tourism and hospitality sector could be beyond 3% by 2026. According to a recently published report, it was mentioned that the tourism and hospitality sector in Pakistan has grown significantly during the last five years. The report further showed that around 0.5 million tourists visited Pakistan in 2013, which grew by 6.6 million in 2018 [84]. Along with domestic tourists, the largest inflow of international tourists was from the United Kingdom, USA, India, and China. With respect to tourist destinations, Lahore is at the top of the list of the five most-visited places by tourists.

However, considering the outsized environmental hazards associated with this sector, it can be said that the hospitality sector is at a crossroads. On one side, it has been receiving significant growth and developmental activities. On the other side, the environmental issues associated with the hospitality industry in the country require some emergency measures. Of direct importance to mention here is that the environmental dilapidation in Pakistan has been increasing with each passing year. Unfortunately, Pakistan occupies a poor position (176th among 180) in the list of countries with better environmental conditions [85]. Rising temperatures, extreme weather conditions, dust fumes, and poor air quality are some critical environmental challenges that require emergency measures at all levels and sectors with no exception for the hotel industry. Hotel organizations produce different negative environmental impacts during their operations, for example, water and energy consumption. Compared to other service segments, hotels operate 24 h on a daily basis (including weekends); this is one of the reasons that, in the service sector, hospitality is known for its outsized environmental impact. Climate data shows that the environmental footprint of the hospitality sector can be improved by promoting environmentally friendly behavior among employees [86]; this provides another reason to conduct this study in a hospitality context. We selected Lahore and Karachi cities of Pakistan to collect the data due to two reasons. First, both are large cities with a multi-million population. Indeed, both

are provincial capitals, and almost every known hotel operates in Lahore and Karachi. The second and most important reason to consider these cities lies in the poor environmental conditions in these cities. Specifically, despite being a famous place for tourists, Lahore was identified as the worst place in the world [87,88] in terms of the poor air quality index [89]. Even Karachi joins the list of the top ten most polluted cities in the world. Considering the poor environmental conditions in these two cities, we included Lahore and Karachi in this survey.

To start with the data collection activity, we communicated with different hotels to support this data collection process. Before contacting different hotels, we confirmed that an identified hotel has a specific CSR plan. It was realized that all big hotels were conducting different activities under a CSR plan. Six hotels agreed to participate in this survey by letting us contact their employees. We included supervisors/managers and employees from different departments (kitchen, administrative, service, etc.) in our survey. The data were administered in three waves with an interval of two weeks between each wave. The data collection activity was carried out between March and May 2021.

3.2. Instrument

We used an adapted questionnaire (self-administered) to collect the data from different hotel employees who were the respondents. Further, we employed a paper-pencil method, which is a famous and well-known technique to collect survey data. The items of the instrument were presented to the field expert for evaluation, as suggested by the previous researchers [90,91]. We also observed the major ethical standard specified in the Helsinki Declaration [92–94]. Generally, the questionnaire was divided into two sections. The first section was related to general socio-demography information (age, gender, education, etc.), and the second section was related to the variable items on a seven-point Likert scale. Initially, six hundred questionnaires were distributed, and we finally received a response rate close to 67% (n = 404). Regarding the socio-demographic information, almost 65% of the sample was male. The age of most of the sample was between 18 and 40 years. Almost 37% of the employees were identified as leaders, and 74% of employees had experience of between 1 and 7 years.

3.3. Measures

To measure the variables of this study (CSR, PEB, ESTFL, and GPOS), we adapted the items from different published and reliable sources. In this respect, the variable of CSR was measured by using 12 items from the famous scale of Turker [95]. Indeed, this scale includes a total of 17 items; however, considering the context of this study, we only considered 12 items that were related to general CSR perceptions and employee-related CSR policies of an organization. One sample item from general CSR perceptions was "This hotel makes investment to create a better life for future generations". Similarly, an employee-related item was "this hotel's policies encourage the employees to develop their skills and careers". Overall, six items were related to general CSR, and six were about employee-oriented CSR policies. A significant reliability value ($\alpha = 0.911$) was achieved for this scale. To measure leaders' perceptions regarding the PEB of an employee, we adapted 12 items from Lamm et al. [96]. An item from this scale was "He/she is a person who uses scrap paper for notes instead of fresh paper". Similarly, another item was "He/she is a person who turns off lights when leaving the office for any reason". The reliability value was significant in this case ($\alpha = 0.898$). The items of ESTFL were adapted from Robertson [71], which included 12 items (3 for the idealized environmental influence of a leader, 3 for employees' consideration of their leader as a source of environmental inspiration, 3 for environmental, intellectual stimulation, and 3 for a leader's individualized environmental consideration). Sample items from this scale included "My leader motivates me to work in an environmentally friendly manner" and "My leader shows that he/she values the natural environment". The reliability value of $\alpha = 0.905$ was observed for this scale. Finally, we adapted the scale of Eisenberger et al. [37] to measure GPOS, which consisted of 4 items. One sample item was "Our hotel enterprise really cares about my environmental goals and values". The α -value for this scale was 0.810. For more detail on survey items see Appendix A.

3.4. Non-Response Bias and Common Latent Factor Test

To decide whether the issue of non-response bias existed in the dataset of this study, we compared the respondents who provided all requested information with those who did not. It was observed that no-significant difference existed between these two groups. This implies that the issue of non-response bias if it existed, was not critical in this survey. Similarly, although we employed a multi-source sampling strategy to avoid the issue of common method bias (CMB), still, we performed a common latent factor test (CLF). In this vein, a measurement model was developed in AMOS software, which was compared with another model (a CLF measured model). The results of both models were observed. Specifically, the standardized factor loadings in both cases did not significantly differ (>0.2). These results were enough to warrant that the dataset of this survey did not suffer from the issue of CMB.

4. Results

4.1. Establishment of Validity and Reliability through Variable Evaluation

We evaluated the variables of this study by verifying convergent validity (C.V) and composite reliability (C.R). To achieve this, the standardized factor loadings during the confirmatory factor analysis (CFA) were considered (refer to Table 1 for further detail). Generally, the factor loading (λ) of an item is considered sufficient if it produces a λ value greater than 0.7. In this respect, there were four variables in this study (CSR = 12, PEB = 12, ESTFL = 12, and GPOS = 4, Total = 38). However, the process of CFA revealed that some items did not load well on to their respective factors (weak factor loadings). Therefore, the items which did not show significant factor loadings were deleted from further analysis. Specifically, two items of PEB and one item of ESTFL showed a weak factor loading. Thus, we removed these items from further analysis (the final analysis was carried out with CSR = 12, PEB = 10, ESTFL = 11, GPOS = 4, Total = 35). The retained items' loadings were then used to calculate the value of the average variance extracted (AVE) of each variable. For example, the AVE for CSR was 0.519, which was significant (AVE > 0.5 is considered significant). A similar case with other variables was observed. This implies that the values of AVE were significant in all cases; thus, the C.V for each variable was also significant. Similarly, the same factor loadings were used to calculate the values of C.R for every variable. It was observed that the value of C.R was greater than 0.7 in all four cases. As a sample case, we calculated the C.R = 0.928 for CSR, which was well above the cutoff value of 0.7. These results provided sufficient statistical evidence that C.V and C.R were significant for CSR, PEB, ESTFL, and GPOS.

4.2. Correlations

We also observed the values of correlations (*r*) between different variables. The output of the correlation analysis is reported in Table 2. These results revealed that a positive correlation existed in different cases. Specifically, the *r* values varied between 0.210 (ESTFL \Leftrightarrow GPOS; *p* < 0.01) and 0.416 (ESTFL \Leftrightarrow PEB; *p* < 0.01). These statistical findings of correlation analysis provided initial support to the hypotheses of this study. Further, we evaluated the discriminant validity (DV) for all variables. This step was considered to see if the items of one variable were dissimilar from the items of the other variables. To assess the DV of a variable, the square root of each AVE (sqAVE) was taken, which was then compared with the correlation results. To further explain, the value of sqAVE for CSR was 0.720, whereas the *r* values were 0.359, 0.319, and 0.261. To decide whether a case for a significant DV exists, the sqAVE value should be superior to the *r* values, which was the case here. Thus, it was observed that a significant D.V case existed in every case, implying that the items of one variable were not similar to the items of other variables.

| | λ | λ^2 | S.E | T. Values | E-Variance | AVE | C.R |
|-------|-------|-------------|-------|-----------|------------|-------|-------|
| CSR | | | | | | 0.519 | 0.928 |
| | 0.723 | 0.523 | 0.061 | 11.85 | 0.477 | | |
| | 0.715 | 0.511 | 0.062 | 11.53 | 0.489 | | |
| | 0.733 | 0.537 | 0.060 | 12.22 | 0.463 | | |
| | 0.761 | 0.579 | 0.056 | 13.59 | 0.421 | | |
| | 0.707 | 0.500 | 0.063 | 11.22 | 0.500 | | |
| | 0.703 | 0.494 | 0.064 | 10.98 | 0.506 | | |
| | 0.738 | 0.545 | 0.060 | 12.30 | 0.455 | | |
| | 0.702 | 0.493 | 0.064 | 10.97 | 0.507 | | |
| | 0.702 | 0.507 | 0.063 | 11.30 | 0.493 | | |
| | 0.705 | 0.497 | 0.064 | 11.02 | 0.503 | | |
| | | | | | | | |
| | 0.704 | 0.496 | 0.064 | 11.00 | 0.504 | | |
| | 0.736 | 0.542 | 0.060 | 12.27 | 0.458 | | |
| PEB | | | | | | 0.534 | 0.915 |
| | 0.712 | 0.507 | 0.063 | 11.30 | 0.493 | | |
| | 0.702 | 0.493 | 0.064 | 10.97 | 0.507 | | |
| | 0.705 | 0.497 | 0.064 | 11.02 | 0.503 | | |
| | 0.709 | 0.503 | 0.063 | 11.25 | 0.497 | | |
| | 0.722 | 0.521 | 0.061 | 11.84 | 0.479 | | |
| | 0.734 | 0.539 | 0.060 | 12.23 | 0.461 | | |
| | 0.728 | 0.530 | 0.059 | 12.34 | 0.470 | | |
| | 0.701 | 0.491 | 0.064 | 10.95 | 0.509 | | |
| | 0.739 | 0.546 | 0.060 | 12.32 | 0.454 | | |
| | 0.752 | 0.566 | 0.057 | 13.19 | 0.434 | | |
| ESTFL | 0.702 | 0.000 | 0.007 | 10.17 | 0.101 | 0.537 | 0.927 |
| LOTIL | 0.712 | 0.507 | 0.063 | 11.30 | 0.493 | 0.007 | 0.727 |
| | | 0.529 | | | | | |
| | 0.727 | | 0.060 | 12.12 | 0.471 | | |
| | 0.700 | 0.490 | 0.064 | 10.94 | 0.510 | | |
| | 0.719 | 0.517 | 0.061 | 11.79 | 0.483 | | |
| | 0.733 | 0.537 | 0.060 | 12.22 | 0.463 | | |
| | 0.759 | 0.576 | 0.057 | 13.32 | 0.424 | | |
| | 0.740 | 0.548 | 0.059 | 12.54 | 0.452 | | |
| | 0.758 | 0.575 | 0.057 | 13.30 | 0.425 | | |
| | 0.721 | 0.520 | 0.061 | 11.82 | 0.480 | | |
| | 0.722 | 0.521 | 0.061 | 11.84 | 0.479 | | |
| | 0.768 | 0.590 | 0.053 | 14.49 | 0.410 | | |
| GPOS | | | | | | 0.554 | 0.832 |
| | 0.702 | 0.493 | 0.064 | 10.97 | 0.507 | | |
| | 0.716 | 0.513 | 0.062 | 11.55 | 0.487 | | |
| | 0.776 | 0.602 | 0.052 | 14.92 | 0.398 | | |
| | 0.781 | 0.610 | 0.050 | 15.62 | 0.390 | | |

Table 1. Validity and reliability of variables.

Notes: λ = Item loadings, C.R = composite reliability, $\sum \lambda^2$ = sum of square of item loadings, E-Variance = error variance, S.E = standard error.

| Construct | CSR | PEB | ESTFL | GPOS | Mean | S.D |
|-----------|-------|-------|-------|-------|------|------|
| CSR | 0.720 | 0.359 | 0.319 | 0.261 | 4.78 | 0.74 |
| PEB | | 0.721 | 0.416 | 0.388 | 5.03 | 0.68 |
| ESTFL | | | 0.733 | 0.210 | 4.88 | 0.70 |
| GPOS | | | | 0.745 | 4.92 | 0.69 |

Notes: S.D = standard deviation, diagonal = discriminant validity values, p < 0.001.

Table 3 includes the results of different measurement models (alternate and baseline). This step was carried out to see which measurement model produces the most significant

values. In this respect, three measurement models were developed in AMOS (Model 2, 3, and 4), which were compared to the baseline (hypothesized) model (Model 1). In this respect, different model fit indices were taken into consideration to decide which model best fits the dataset of this study. Similarly, a change in the chi-square (χ^2) /degree of freedom $(df) - \Delta \chi^2/df$ was also observed. It was realized that compared to different alternate models, the hypothesized model was the most significant. In this respect, the usual acceptable value for the normed fit index (NFI) and comparative fit index (CFI) should be greater than 0.900. Similarly, a value of less than 0.8 for the root mean square error of approximation (RMSEA) is considered acceptable. Although the application of RMSEA, CFI, and NFI is heavily contingent on a set of cutoff criteria, some scholars have suggested that CFI and NFI values should be >0.95 [97]. However, these suggestions are largely based on intuition and experience rather than on any statistical justification [98]. In this respect, the study by Hu and Bentler [97] is highly influential in almost all SEM analyses; nevertheless, their study only concerns continuous data that are analyzed using the normal-theory maximum likelihood (ML). More specifically, Hu and colleague had cautioned that the suggested cutoff values might not generalize to conditions that were not manipulated in their study. Considering the above debate, the model fit values of Model 1 were in acceptable ranges (NFI = 0.912, CFI = 0.918, χ^2/df = 2.362, and RMSEA = 0.052).

| Model | χ^2/df [99] | $\Delta \chi^2/df$ | NFI [100] | CFI [100] | RMSEA [97] |
|---------------------------|------------------|--------------------|-----------|-----------|-------------------|
| Model 1 (hypothesized) | 2.362 | _ | 0.912 | 0.918 | 0.052 |
| Model 2 (3-factor) | 3.758 | 1.396 | 0.842 | 0.843 | 0.059 |
| Model 3 (2-factor) | 4.883 | 1.125 | 0.758 | 0.760 | 0.068 |
| Model 4 (1-factor) | 5.692 | 0.809 | 0.648 | 0.651 | 0.094 |

4.3. Total, Direct, Indirect Effects, and Hypotheses

Lastly, to evaluate the hypothesized relationships, structural equation modeling (SEM) was taken into consideration. A three-step process to develop a structural model was followed. In this vein, a direct effect structural model was evaluated in the first place. This model was developed to see the significance of direct relations; specifically, we refer to the statements of H1, H2, and H3. We observed beta (β), t, and p-values to decide whether these relationships were statistically significant or not. The results of direct effect model indicated that the statements of H1 (β = 0.241, t = 3.394 > 2; p < 0.05), H2 (β = 0.317, t = 5.032 > 2; p < 0.05), and H3 (β = 0.388, t = 8.435 > 2; p < 0.05) were statistically supported by the data. Thus H1, 2, and 3 were accepted.

After evaluating the direct effect structural model, we tested the mediating effect of ESTFL by including it as a mediator in the second place. The bootstrapping option in AMOS was utilized [93] in this process with a larger bootstrapping sample (2000). The results indicated that ESTFL partially mediates between CSR and PEB ($\beta = 0.123$, z = 5.857, CI = 0.117–0.210). Further, the mediation effect explained 33.79% of the total variation in PEB.

Lastly, we tested the conditional indirect effect of GPOS in the third place. To do this, the same stage 2 structural model was considered (with the same bootstrapping option), but this time, we included the conditional indirect effect of GPOS. For this, an interaction term (CSR \times GPOS) was developed and included in the structural model. It was noted that after the inclusion of this interaction term, the overall regression weight was increased (from 0.123 to 0.279). This implies that the conditional indirect effect of GPOS was significant between the mediated relationship of CSR and PEB through ESTFL. Thus, H4 and H5 were also accepted. Table 4 contains detailed information on hypotheses testing results.

| Relationship | Estimates (SE) | t/z | <i>p</i> -Value | CI |
|--------------|--|--|--|--|
| positive | 0.364 (0.056) | 6.500 | 0.004 | 0.297-0.422 |
| | | | | |
| Positive | 0.241 (0.071) | 3.394 | 0.000 | 0.262-0.378 |
| Positive | 0.317 (0.063) | 5.032 | 0.002 | 0.308-0.392 |
| Positive | 0.388 (0.046) | 8.435 | 0.000 | 0.315-0.502 |
| Positive | 0.364 (0.049) | 7.429 | 0.000 | 0.349-0.522 |
| | | | | |
| positive | 0.123 (0.021) | 5.857 | 0.002 | 0.117-0.210 |
| | | | | |
| positive | 0.279 (0.029) | 9.621 | 0.000 | 0.251-0.345 |
| * | · · · | | | |
| | positive Positive Positive Positive Positive positive | positive 0.364 (0.056) Positive 0.241 (0.071) Positive 0.317 (0.063) Positive 0.388 (0.046) Positive 0.364 (0.049) positive 0.123 (0.021) | positive 0.364 (0.056) 6.500 Positive 0.241 (0.071) 3.394 Positive 0.317 (0.063) 5.032 Positive 0.388 (0.046) 8.435 Positive 0.364 (0.049) 7.429 positive 0.123 (0.021) 5.857 | positive 0.364 (0.056) 6.500 0.004 Positive 0.241 (0.071) 3.394 0.000 Positive 0.317 (0.063) 5.032 0.002 Positive 0.388 (0.046) 8.435 0.000 Positive 0.364 (0.049) 7.429 0.000 positive 0.123 (0.021) 5.857 0.002 |

Table 4. Total, direct, indirect, and conditional effects.

Notes: CI = 95% confidence interval with lower and upper limits.

5. Discussion

This study revealed that the CSR activities of a hotel enterprise could motivate its employees to act pro-environmentally. Indeed, when employees see that their ethical hotel enterprise shows a greater commitment to preserving the environment under the umbrella of CSR, they develop a sense of self-responsibility on their part to support the social narrative of their organization. Thus, they are expected to exhibit socially responsible behavior by engaging themselves in different activities that can improve the environmental footprint of an enterprise. Different extant researchers have also derived a positive relationship between the CSR and PEB of employees [16–101]. The SIT also provides an explanation for the above relationship. In this regard, employees develop a positive feeling of sense-making about their organization due to its CSR activities, which then positively influences their attitude and behavior. Indeed, due to the socially responsible behavior of an organization, employees feel proud to be a part of such an ethical organization and wish not only to maintain its positive image but also to show extra engagement to improve it further. Further, in the process of sense-making, as an outcome of CSR, employees are expected to associate themselves with an ethical organization emotionally and cognitively, which ultimately urges them to behave pro-environmentally [25,26].

Another important point that this study highlights is the role of a corporate leader in influencing the specific behavior of employees. Especially, our research discussed the important role of ESTFL in driving PEB on the part of employees. In this vein, a transformational leader with environmental preference is who communicates to the followers about the importance of the natural environment and urges them to act in a manner that produces minimal or no harm to the environment. Employees learn this environmental orientation from their leader, which eventually improves their PEB. In other words, a transformational leader can enhance employees' PEB by elevating their motivation to act pro-environmentally to preserve nature for future generations. Essentially, the same environmental concern is at the heart of an ethical organization that desires to reduce environmental crises through its eco-friendly initiatives. Therefore, when a transformational leader works in an ethical organization, the relationship between CSR and PEB is better explained. Hence, not only the direct relationship of ESTFL on employees' PEB was significant [68–102], but the mediating effect of ESTFL was also significant [63].

Lastly, our research also discusses the conditional indirect role of GPOS between the mediated relationship of CSR and employees' PEB through ESTFL. To this end, employees serving in a socially responsible organization believe that their ethical organization values their contribution. Especially in line with the theme of this research, employees' belief that their organization provides them with a supportive environment is critical for them to draw meaning with respect to the contextual (environmental) aspect of their organization. Employees' GPOS feelings motivate them to support their organization in achieving sustainability objectives. Employees feel if they contribute to environmental improvement,

such contributions will be evaluated positively by the management. A transformational leader with environmental values influences the followers to act pro-environmentally. When an ethical organization provides a supportive environment to the employees with respect to environmental efficiency in the form of corporate leaders, employees are further elevated to be engaged in different environmental behaviors. The indirect role of GPOS in influencing employee behavior was also discussed previously [103,104]; however, the current context was not discussed earlier.

5.1. Theoretical Implications

Theoretically, this study advances the debate on sustainability by highlighting the role of CSR and leadership in a hospitality context of a developing country. Specifically, our study fills the following knowledge gaps in the existing literature. First, this study shows that a hotel's employees can improve its environmental footprint by acting proenvironmentally if the hotel is socially responsible. Although the prior literature has discussed the role of an organization's CSR activities in influencing the sustainable behavior of employees, the hospitality sector from the perspective of a developing country was not investigated previously. Second, this study tends to enrich the CSR and organizational management literature by taking into consideration the mediating role of ESTFL and the moderating role of GPOS simultaneously in a unified model to drive employees' PEB. The early literature also highlights the role of leadership in influencing employee behavior. Even the role of a transformational leader in fostering employees' PEB was also discussed. Nevertheless, most of the literature either investigated the direct relationship between leadership and PEB [68–102] or neglected its potential mediating effect in a CSR framework. Though some recent studies highlighted the mediating role of leadership in a CSR framework [35,36], the perspective of the current study was missed in most of these studies. Lastly, this study is one of the sparse studies that take into consideration the targetspecific (environmental-specific) approach of transformational leadership to reduce the carbon footprint of a hotel enterprise. In this vein, the role of transformational leadership was already discussed. Still, unlike the bulk of the previous literature, which focused on the general role of transformational leadership, this study employs a target-specific approach.

5.2. Practical Implications

Practically, this study helps the hospitality sector of Pakistan in the following ways. In the first place, our work indicates that well-planned CSR activities of a hotel enterprise not only improve its image as an ethical enterprise but also motivate the employees to support it in achieving sustainability initiatives. This finding is very relevant to the hospitality sector of Pakistan, a country that is facing critical environmental issues. As the hospitality sector is known for its outsized carbon footprint throughout the globe, with no exception in Pakistan, it is important for this sector to take necessary steps toward de-carbonization. From this aspect, the sustainable behavior of employees is of direct importance, and the CSR activities of a hotel can influence the eco-friendly behavior of employees. Second, the role of effective leadership (i.e., ESTFL) in achieving the sustainability objectives of an enterprise and shaping employees' sustainable behavior was also discussed in this research study. In this respect, the management of a hotel enterprise is required to urge its corporate managers to reflect on their environmental preferences during the operational execution of different tasks. For this purpose, the management needs to incorporate the sustainability perspective into different leadership developmental plans. Third, the role of leadership is also important for a hotel to develop employees' perceptions regarding green organizational support. To this end, ESTFL can effectively integrate the environmental preference of employees with their self-construction by clarifying that the hotel gives preference to environmental efficiency, and if they contribute to it, they will be positively evaluated. Last but not least, this study also invites the management to reorient a CSR plan. Given that most of the hotels in Pakistan spend CSR funds for philanthropic purposes

(charity and donation), it is important to note the role of CSR in reducing the environmental hazards associated with the hospitality sector.

5.3. Limitations and Future Research Guidelines

Though this study significantly advances theory and practice, a few limitations were also observed. However, these potential limitations also provide motivation for future scholars in the same field. The first limitation of this study lies with the sampling process. This study selected a non-probability sampling, which is considered inferior compared to a probability sampling method. We, in this vein, were not able to access any sampling frame due to some policy and safety restrictions. Thus, it was not possible to apply a probability sampling technique; however, in future studies, this limitation may be addressed by employing a probability sampling technique. Geographic concentration was another potential issue in this study, as it mainly focused on Lahore and Karachi. Though these cities were holding a dominant hotel industry share, still, it is suggested that in future studies, more cities should be included. Another limitation of this study is the reliance on perceptual measures of CSR to drive employee creativity. Even though a bulk of the prior literature has argued in favor of perceptual measures, we still feel an objective measure should be incorporated in future studies. Lastly, in the presence of a cross-sectional data design, the claim for causal relations may be weaker. Therefore, a longitudinal data design is suggested in future studies.

6. Conclusions

To conclude, this study is important for the hospitality sector of Pakistan from an environmental perspective. Considering the environmental vulnerability in Pakistan, the country requires supporting interventions from each sector, including the hospitality sector. The environmental hazards associated with the hospitality industry can be reduced by promoting the PEB among employees. For this, carefully planned CSR activities and the presence of an effective leadership style can be helpful in promoting the eco-friendly behavior of employees. Employees working in an ethical organization, supported by their corporate leaders, and with a perception of GPOS, are expected to show greater environmental commitment by displaying different environmental behaviors. In a nutshell, if the tourism and hospitality sector of Pakistan has to align itself with the United Nations' sustainable development goals, it is critical to follow a three bottom-line sustainability philosophy (people, planet, and profit). To achieve this, the role of employees is of seminal importance, especially from an environmental perspective. Therefore, CSR and an effective leadership style may be the way forward for this sector.

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Institutional Review Board Statement: The present research was approved by the Institutional Review Committee of Lahore Leads University, Pakistan (No. LLU/ERC/Res/128/72; Dated: 2 February 2021).

Informed Consent Statement: Informed consent was obtained from each respondent.

Data Availability Statement: The raw data of this work will be provided on a reasonable request by contacting the corresponding author(s).

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. The survey items.

| | CSR |
|--------|--|
| Our h | otel participates in activities that aim to protect and improve the quality of the natural environment |
| Our h | otel makes investments to create a better life for future generations |
| Our h | otel implements special programs to minimize its negative impact on the natural environment |
| Our h | otel targets sustainable growth, which considers to the future generations |
| Our h | otel supports the non-governmental organizations that work in the problematic areas |
| Our h | otel contributes to the campaigns and projects that promote the well-being of society |
| Our h | otel encourages its employees to participate in voluntary activities |
| Our h | otel's policies encourage the employees to develop their skills and careers |
| The m | nanagement of our hotel is primarily concerned with the employees' needs and wants |
| Our h | otel implements flexible policies to provide a good work environment and life balance for its employee |
| The m | nanagerial decisions related to the employees are usually fair |
| Our h | otel supports employees who want to acquire additional education |
| | PEB |
| He/sł | ne is a person who recycles his/her bottles, cans, and other containers |
| He/sł | ne is a person who uses scrap paper for notes instead of fresh paper |
| He/sł | ne is a person who prints double-sided |
| He/sł | ne is a person who turns off lights when leaving office for any reason |
| He/sł | ne is a person who recycles used paper |
| He/sł | ne is a person who powers off the computer when away for more than 3 h |
| He/sł | ne is a person who powers down all desk electronics at the end of the day |
| He/sł | ne is a person who uses a reusable water bottle instead of a paper cup at the water cooler or faucet |
| He/sł | ne is a person who uses a reusable coffee cup instead of a paper cup |
| He/sł | ne is a person who properly disposes of electronic waste |
| He/sł | ne is a person who makes sure all of the lights are turned off if he/she is the last to leave ESTFL |
| My le | ader acts as an environmental role model |
| My le | ader motivates me to work in an environmentally friendly manner |
| My le | ader shows a commitment to improving our hotel's environmental performance |
| My le | ader encourages me to think about environmental issues in different ways |
| My le | ader shows that (s)he values the natural environment |
| My le | ader is open to my ideas about ways to improve our hotel's environmental performance |
| My le | ader recognizes my ability to improve our hotel's environmental performance |
| My le | ader takes note of my individual contributions to our hotel's environmental performance |
| My le | ader spends time developing my skills to contribute to our hotel's environmental performance |
| My le | ader is passionate about improving the future state of the natural environment |
| My le | ader urges me to think creatively about improving our hotel's environmental performance |
| My le | ader is optimistic about the future of our hotel's environmental performance |
| • | GPOS |
| This h | otel really cares about my environmental goals and values |
| | otel values my contribution to environmental management |
| This h | notel cares about my opinions on sustainability |
| This h | notel takes pride in my accomplishments on environmental issues at work |

References

- 1. United Nations World Tourism Organization. United Nations World Tourism Annual Report. Available online: https://www.e-unwto.org/doi/book/10.18111/9789284416905 (accessed on 11 June 2021).
- United Nations World Tourism Organization. International Tourist Arrivals Reach 1.4 Billion Two Years Ahead Of Forecasts. Available online: https://www.unwto.org/global/press-release/2019-01-21/international-tourist-arrivals-reach-14-billion-twoyears-ahead-forecasts#:~{}:text=Growth%20expected%20to%20return%20to,line%20with%20historic%20growth%20trends (accessed on 14 July 2021).
- 3. Thommandru, A.; Espinoza-Maguiña, M.; Ramirez-Asis, E.; Ray, S.; Naved, M.; Guzman-Avalos, M. Role of tourism and hospitality business in economic development. *Mater. Today Proc.* **2021**. [CrossRef]
- Statista. Global Tourism Industry-Statistics & Facts. Available online: https://www.statista.com/topics/962/global-tourism/ #dossierKeyfigures (accessed on 2 March 2022).
- World Travel & Tourism Council. Economic Impact Reports. Available online: https://wttc.org/Research/Economic-Impact#: ~{}:text=In%202019%2C%20the%20Travel%20%26%20Tourism,to%20ongoing%20restrictions%20to%20mobility (accessed on 22 June 2021).
- Insights, E. Hospitality industry: All Your Questions Answered. Available online: https://hospitalityinsights.ehl.edu/hospitalityindustry (accessed on 21 June 2021).
- Ansari, N.Y.; Anjum, T.; Farrukh, M.; Heidler, P. Do Good, Have Good: A Mechanism of Fostering Customer Pro-Environmental Behaviors. Sustainability 2021, 13, 3781. [CrossRef]

- Koçak, E.; Ulucak, R.; Ulucak, Z.Ş. The impact of tourism developments on CO₂ emissions: An advanced panel data estimation. *Tour. Manag. Perspect.* 2020, 33, 100611. [CrossRef]
- Lenzen, M.; Sun, Y.-Y.; Faturay, F.; Ting, Y.-P.; Geschke, A.; Malik, A. The carbon footprint of global tourism. *Nat. Clim. Change* 2018, *8*, 522–528. [CrossRef]
- 10. Dorta Antequera, P.; Díaz Pacheco, J.; López Díez, A.; Bethencourt Herrera, C. Tourism, transport and climate change: The carbon footprint of international air traffic on Islands. *Sustainability* **2021**, *13*, 1795. [CrossRef]
- 11. Sustainable Hospitality Alliance. Climate Change and the Hospitality Industry. Available online: https://sustainablehospitalityalliance. org/our-work/climate-action/ (accessed on 19 July 2021).
- Sustainable Hospitality Alliance. Global Hotel Decarbonisation Report. Available online: https://sustainablehospitalityalliance. org/resource/global-hotel-decarbonisation-report/ (accessed on 15 July 2021).
- UNEP. Emissions Gap Report 2021. Available online: https://www.unep.org/resources/emissions-gap-report-2021?utm_term= emissions%20gap&utm_campaign=Search_Global_Climate_Action&utm_source=adwords&utm_medium=ppc&hsa_acc=19 70971754&hsa_cam=15139102696&hsa_grp=128680613505&hsa_ad=558137628912&hsa_src=g&hsa_tgt=kwd-146185346513 2&hsa_kw=emissions%20gap&hsa_mt=p&hsa_net=adwords&hsa_ver=3&gclid=CjwKCAiAm7OMBhAQEiwArvGi3Ca-5perNWFqNqNKMz0apSnSHs36zHMmMdyP900ctlKqOD0C27-exoCANMQAvD_BwE (accessed on 2 April 2021).
- 14. Kollmuss, A.; Agyeman, J. Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environ. Educ. Res.* 2002, *8*, 239–260. [CrossRef]
- 15. Bissing-Olson, M.J.; Iyer, A.; Fielding, K.S.; Zacher, H. Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *J. Organ. Behav.* **2013**, *34*, 156–175. [CrossRef]
- 16. Tian, Q.; Robertson, J.L. How and when does perceived CSR affect employees' engagement in voluntary pro-environmental behavior? *J. Bus. Ethics* **2019**, *155*, 399–412. [CrossRef]
- Ahmad, N.; Ullah, Z.; Arshad, M.Z.; Waqas, K.H.; Scholz, M.; Han, H. Relationship between corporate social responsibility at the micro-level and environmental performance: The mediating role of employee pro-environmental behavior and the moderating role of gender. *Sustain. Prod. Consum.* 2021, 27, 1138–1148. [CrossRef]
- Yu, H.; Shabbir, M.S.; Ahmad, N.; Ariza-Montes, A.; Vega-Muñoz, A.; Han, H.; Scholz, M.; Sial, M.S. A contemporary issue of micro-foundation of CSR, employee pro-environmental behavior, and environmental performance toward energy saving, carbon emission reduction, and recycling. *Int. J. Environ. Res. Public Health* 2021, 18, 5380. [CrossRef]
- 19. Luu, T.T. CSR and organizational citizenship behavior for the environment in hotel industry. *Int. J. Contemp. Hosp. Manag.* 2017, 29, 2867–2900. [CrossRef]
- Bavik, A. Corporate social responsibility and service-oriented citizenship behavior: A test of dual explanatory paths. *Int. J. Hosp. Manag.* 2019, *80*, 173–182. [CrossRef]
- Guo, M.; Ahmad, N.; Adnan, M.; Scholz, M.; Naveed, R.T. The relationship of csr and employee creativity in the hotel sector: The mediating role of job autonomy. *Sustainability* 2021, 13, 10032. [CrossRef]
- 22. Kalyar, M.N.; Ali, F.; Shafique, I. Green mindfulness and green creativity nexus in hospitality industry: Examining the effects of green process engagement and CSR. *Int. J. Contemp. Hosp. Manag.* 2021, *33*, 2653–2675. [CrossRef]
- 23. Boğan, E.; Saruşık, M. Organization-related determinants of employees' CSR motive attributions and affective commitment in hospitality companies. *J. Hosp. Tour. Manag.* 2020, *45*, 58–66. [CrossRef]
- Anthony Wong, I.; Hong Gao, J. Exploring the direct and indirect effects of CSR on organizational commitment. *Int. J. Contemp. Hosp. Manag.* 2014, 26, 500–525. [CrossRef]
- Shah, S.H.A.; Cheema, S.; Al-Ghazali, B.M.; Ali, M.; Rafiq, N. Perceived corporate social responsibility and pro-environmental behaviors: The role of organizational identification and coworker pro-environmental advocacy. *Corp. Soc. Responsib. Environ. Manag.* 2021, 28, 366–377. [CrossRef]
- Raza, A.; Farrukh, M.; Iqbal, M.K.; Farhan, M.; Wu, Y. Corporate social responsibility and employees' voluntary pro-environmental behavior: The role of organizational pride and employee engagement. *Corp. Soc. Responsib. Environ. Manag.* 2021, 28, 1104–1116. [CrossRef]
- Yao, Y.-H.; Fan, Y.-Y.; Guo, Y.-X.; Li, Y. Leadership, work stress and employee behavior. *Chin. Manag. Stud.* 2014, *8*, 109–126. [CrossRef]
- Duan, J.; Li, C.; Xu, Y.; Wu, C.h. Transformational leadership and employee voice behavior: A Pygmalion mechanism. *J. Organ. Behav.* 2017, *38*, 650–670. [CrossRef]
- Fu, Q.; Cherian, J.; Ahmad, N.; Scholz, M.; Samad, S.; Comite, U. An Inclusive Leadership Framework to Foster Employee Creativity in the Healthcare Sector: The Role of Psychological Safety and Polychronicity. *Int. J. Environ. Res. Public Health* 2022, 19, 4519. [CrossRef] [PubMed]
- Raza, A.; Saeed, A.; Iqbal, M.K.; Saeed, U.; Sadiq, I.; Faraz, N.A. Linking corporate social responsibility to customer loyalty through co-creation and customer company identification: Exploring sequential mediation mechanism. *Sustainability* 2020, 12, 2525. [CrossRef]
- 31. Balwant, P.T.; Mohammed, R.; Singh, R. Transformational leadership and employee engagement in Trinidad's service sector. *Int. J. Emerg. Mark.* **2020**, *15*, 691–715. [CrossRef]
- Barling, J.; Loughlin, C.; Kelloway, E.K. Development and test of a model linking safety-specific transformational leadership and occupational safety. J. Appl. Psychol. 2002, 87, 488. [CrossRef] [PubMed]

- 33. Conchie, S.M.; Donald, I.J. The moderating role of safety-specific trust on the relation between safety-specific leadership and safety citizenship behaviors. *J. Occup. Health Psychol.* **2009**, *14*, 137. [CrossRef]
- 34. Beauchamp, M.R.; Barling, J.; Li, Z.; Morton, K.L.; Keith, S.E.; Zumbo, B.D. Development and psychometric properties of the transformational teaching questionnaire. *J. Health Psychol.* **2010**, *15*, 1123–1134. [CrossRef]
- 35. Murtaza, S.A.; Mahmood, A.; Saleem, S.; Ahmad, N.; Sharif, M.S.; Molnár, E. Proposing stewardship theory as an alternate to explain the relationship between CSR and Employees' pro-environmental behavior. *Sustainability* **2021**, *13*, 8558. [CrossRef]
- Ahmad, N.; Scholz, M.; Arshad, M.Z.; Jafri, S.K.A.; Sabir, R.I.; Khan, W.A.; Han, H. The inter-relation of corporate social responsibility at employee level, servant leadership, and innovative work behavior in the time of crisis from the healthcare sector of pakistan. *Int. J. Environ. Res. Public Health* 2021, 18, 4608. [CrossRef]
- 37. Eisenberger, R.; Huntington, R.; Hutchison, S.; Sowa, D. Perceived organizational support. J. Appl. Psychol. **1986**, 71, 500. [CrossRef]
- Hur, W.-M.; Moon, T.-W.; Choi, W.-H. The role of job crafting and perceived organizational support in the link between employees' CSR perceptions and job performance: A moderated mediation model. *Curr. Psychol.* 2021, 40, 3151–3165. [CrossRef]
- 39. Joo, B.-K.; Hahn, H.-J.; Peterson, S.L. Turnover intention: The effects of core self-evaluations, proactive personality, perceived organizational support, developmental feedback, and job complexity. *Hum. Resour. Dev. Int.* **2015**, *18*, 116–130. [CrossRef]
- 40. Tajfel, H. Social Categorization, Social Identity and Social Comparison; Academic Press: London, UK, 1978; pp. 61–76.
- 41. Ashforth, B.E.; Mael, F. Social identity theory and the organization. Acad. Manag. Rev. 1989, 14, 20–39. [CrossRef]
- 42. Ahmad, N.; Ullah, Z.; AlDhaen, E.; Han, H.; Scholz, M. A CSR perspective to foster employee creativity in the banking sector: The role of work engagement and psychological safety. *J. Retail. Consum. Serv.* **2022**, *67*, 102968. [CrossRef]
- 43. Turker, D. How corporate social responsibility influences organizational commitment. J. Bus. Ethics 2009, 89, 189–204. [CrossRef]
- 44. Ko, K.-C.; Nie, J.; Ran, R.; Gu, Y. Corporate social responsibility, social identity, and innovation performance in China. *Pac.-Basin Financ. J.* **2020**, *63*, 101415. [CrossRef]
- 45. Abdullah, M.I.; Ashraf, S.; Sarfraz, M. The organizational identification perspective of CSR on creative performance: The moderating role of creative self-efficacy. *Sustainability* **2017**, *9*, 2125. [CrossRef]
- Hur, W.-M.; Moon, T.-W.; Ko, S.-H. How employees' perceptions of CSR increase employee creativity: Mediating mechanisms of compassion at work and intrinsic motivation. *J. Bus. Ethics* 2018, 153, 629–644. [CrossRef]
- Alzaidi, S.M.; Iyanna, S. Developing a conceptual model for voluntary pro-environmental behavior of employees. *Soc. Responsib.* J. 2021, ahead of print. [CrossRef]
- Vlachos, P.A.; Panagopoulos, N.G.; Rapp, A.A. Employee judgments of and behaviors toward corporate social responsibility: A multi-study investigation of direct, cascading, and moderating effects. J. Organ. Behav. 2014, 35, 990–1017. [CrossRef]
- 49. Kim, H.-R.; Lee, M.; Lee, H.-T.; Kim, N.-M. Corporate social responsibility and employee–company identification. *J. Bus. Ethics* **2010**, *95*, 557–569. [CrossRef]
- 50. Brammer, S.; He, H.; Mellahi, K. Corporate social responsibility, employee organizational identification, and creative effort: The moderating impact of corporate ability. *Group Organ. Manag.* **2015**, *40*, 323–352. [CrossRef]
- 51. Kong, L.; Sial, M.S.; Ahmad, N.; Sehleanu, M.; Li, Z.; Zia-Ud-Din, M.; Badulescu, D. CSR as a potential motivator to shape employees' view towards nature for a sustainable workplace environment. *Sustainability* **2021**, *13*, 1499. [CrossRef]
- Ahmad, N.; Ullah, Z.; Mahmood, A.; Ariza-Montes, A.; Vega-Muñoz, A.; Han, H.; Scholz, M. Corporate social responsibility at the micro-level as a "new organizational value" for sustainability: Are females more aligned towards it? *Int. J. Environ. Res. Public Health* 2021, 18, 2165. [CrossRef]
- Molnár, E.; Mahmood, A.; Ahmad, N.; Ikram, A.; Murtaza, S.A. The Interplay between Corporate Social Responsibility at Employee Level, Ethical Leadership, Quality of Work Life and Employee Pro-Environmental Behavior: The Case of Healthcare Organizations. *Int. J. Environ. Res. Public Health* 2021, 18, 4521. [CrossRef] [PubMed]
- 54. Hong, P.C.; Chennattuserry, J.C.; Deng, X.; Hopkins, M.M. Purpose-driven leadership and organizational success: A case of higher educational institutions. *Leadersh. Organ. Dev. J.* 2021, 42, 1004–1017. [CrossRef]
- Vipraprastha, T.; Sudja, I.N.; Yuesti, A. The Effect of Transformational Leadership and Organizational Commitment to Employee Performance with Citizenship Organization (OCB) Behavior as Intervening Variables (At PT Sarana Arga Gemeh Amerta in Denpasar City). Int. J. Contemp. Res. Rev. 2018, 9, 20503–20518. [CrossRef]
- Kargas, A.D.; Varoutas, D. On the relation between organizational culture and leadership: An empirical analysis. *Cogent Bus. Manag.* 2015, 2, 1055953. [CrossRef]
- 57. Baumgartner, R.J. Organizational culture and leadership: Preconditions for the development of a sustainable corporation. *Sustain*. *Dev.* **2009**, *17*, 102–113. [CrossRef]
- Shah, M.S.; Wu, C.; Ullah, Z. The Inter-Relationship between CSR, Inclusive Leadership and Employee Creativity: A Case of the Banking Sector. Sustainability 2021, 13, 9158. [CrossRef]
- Budur, T.; Demir, A. Leadership effects on employee perception about CSR in Kurdistan Region of Iraq. Int. J. Soc. Sci. Educ. Stud. 2019, 5, 184–192.
- 60. Pasricha, P.; Singh, B.; Verma, P. Ethical leadership, organic organizational cultures and corporate social responsibility: An empirical study in social enterprises. *J. Bus. Ethics* **2018**, *151*, 941–958. [CrossRef]
- 61. Visser, W. The nature of CSR leadership. Definitions, characteristics and paradoxes. CSR Int. Pap. Ser. 2011, 4, 1–10.

- 62. Fang, Y.-C.; Ren, Y.-H.; Chen, J.-Y.; Chin, T.; Yuan, Q.; Lin, C.-L. Inclusive Leadership and Career Sustainability: Mediating Roles of Supervisor Developmental Feedback and Thriving at Work. *Front. Psychol.* **2021**, *12*, 671663. [CrossRef] [PubMed]
- Deng, Y.; Cherian, J.; Ahmad, N.; Scholz, M.; Samad, S. Conceptualizing the Role of Target-Specific Environmental Transformational Leadership between Corporate Social Responsibility and Pro-Environmental Behaviors of Hospital Employees. *Int. J. Environ. Res. Public Health* 2022, 19, 3565. [CrossRef]
- 64. Zhang, J.; Xie, C.; Wang, J.; Morrison, A.M.; Coca-Stefaniak, J.A. Responding to a major global crisis: The effects of hotel safety leadership on employee safety behavior during COVID-19. *Int. J. Contemp. Hosp. Manag.* **2020**, *32*, 3365–3389. [CrossRef]
- 65. Islam, M.N.; Furuoka, F.; Idris, A. Mapping the relationship between transformational leadership, trust in leadership and employee championing behavior during organizational change. *Asia Pac. Manag. Rev.* **2021**, *26*, 95–102. [CrossRef]
- Buil, I.; Martínez, E.; Matute, J. Transformational leadership and employee performance: The role of identification, engagement and proactive personality. *Int. J. Hosp. Manag.* 2019, 77, 64–75. [CrossRef]
- Li, H.; Sajjad, N.; Wang, Q.; Muhammad Ali, A.; Khaqan, Z.; Amina, S. Influence of transformational leadership on employees' innovative work behavior in sustainable organizations: Test of mediation and moderation processes. *Sustainability* 2019, 11, 1594. [CrossRef]
- Peng, J.; Chen, X.; Zou, Y.; Nie, Q. Environmentally specific transformational leadership and team pro-environmental behaviors: The roles of pro-environmental goal clarity, pro-environmental harmonious passion, and power distance. *Hum. Relat.* 2021, 74, 1864–1888. [CrossRef]
- To, M.L.; Herman, H.; Ashkanasy, N.M. A multilevel model of transformational leadership, affect, and creative process behavior in work teams. *Leadersh. Q.* 2015, 26, 543–556. [CrossRef]
- 70. Mi, L.; Gan, X.; Xu, T.; Long, R.; Qiao, L.; Zhu, H. A new perspective to promote organizational citizenship behaviour for the environment: The role of transformational leadership. *J. Clean. Prod.* **2019**, 239, 118002. [CrossRef]
- 71. Robertson, J.L. The nature, measurement and nomological network of environmentally specific transformational leadership. *J. Bus. Ethics* **2018**, *151*, 961–975. [CrossRef]
- Li, Z.; Xue, J.; Li, R.; Chen, H.; Wang, T. Environmentally specific transformational leadership and employee's pro-environmental behavior: The mediating roles of environmental passion and autonomous motivation. *Front. Psychol.* 2020, 1408. [CrossRef] [PubMed]
- 73. Graves, L.M.; Sarkis, J. The role of employees' leadership perceptions, values, and motivation in employees' provenvironmental behaviors. *J. Clean. Prod.* **2018**, *196*, 576–587. [CrossRef]
- 74. Robertson, J.L.; Carleton, E. Uncovering how and when environmental leadership affects employees' voluntary pro-environmental behavior. *J. Leadersh. Organ. Stud.* **2018**, *25*, 197–210. [CrossRef]
- 75. Graves, L.M.; Sarkis, J.; Zhu, Q. How transformational leadership and employee motivation combine to predict employee proenvironmental behaviors in China. *J. Environ. Psychol.* **2013**, *35*, 81–91. [CrossRef]
- Saleem, M.; Mahmood, F.; Ahmed, F. Transformational Leadership and Pro-Environmental Behavior of Employees: Mediating Role of Intrinsic Motivation. J. Manag. Res. 2019, 6, 113–137.
- Hongxin, W.; Khan, M.A.; Zhenqiang, J.; Cismaș, L.-M.; Ali, M.A.; Saleem, U.; Negruț, L. Unleashing the Role of CSR and Employees' Pro-Environmental Behavior for Organizational Success: The Role of Connectedness to Nature. *Sustainability* 2022, 14, 3191. [CrossRef]
- Kurtessis, J.N.; Eisenberger, R.; Ford, M.T.; Buffardi, L.C.; Stewart, K.A.; Adis, C.S. Perceived organizational support: A meta-analytic evaluation of organizational support theory. J. Manag. 2017, 43, 1854–1884. [CrossRef]
- 79. Shabbir, T.; Naz, K.; Trivedi, S.D. Perceived Organizational Support and Employee Performance. *Int. J. Educ. Adm. Manag. Leadersh.* 2021, 35–44. [CrossRef]
- 80. Hameed, Z.; Khan, I.U.; Islam, T.; Sheikh, Z.; Khan, S.U. Corporate social responsibility and employee pro-environmental behaviors. *South Asian J. Bus. Stud.* **2019**, *8*, 246–265. [CrossRef]
- Shoss, M.K.; Eisenberger, R.; Restubog, S.L.D.; Zagenczyk, T.J. Blaming the organization for abusive supervision: The roles of perceived organizational support and supervisor's organizational embodiment. *J. Appl. Psychol.* 2013, 98, 158. [CrossRef] [PubMed]
- 82. Azhar, A.; Yang, K. Examining the Influence of Transformational Leadership and Green Culture on Pro-Environmental Behaviors: Empirical Evidence From Florida City Governments. *Rev. Public Pers. Adm.* **2021**. [CrossRef]
- 83. Intelligence, M. Tourism and Hotel Industry in Pakistan-Growth, Trends, COVID 19 Impact and Forecasts (2022–2027). Available online: https://www.mordorintelligence.com/industry-reports/market-entry-tourism-and-hotel-industry-in-pakistan#:~{}: text=Pakistan%20is%20also%20emerging%20as,further%20in%20the%20upcoming%20years (accessed on 19 July 2021).
- 84. Ikram, J. Tourist Traffic Witnesses Sharp Increase in Five Years. Available online: https://www.dawn.com/news/1508132 (accessed on 23 April 2022).
- 85. EPI. Environmental Health. Available online: https://epi.yale.edu/epi-results/2020/component/hlt (accessed on 19 July 2021).
- 86. The News. Hospitality Sector to Adopt Green Practices. Available online: https://www.thenews.com.pk/print/464118 -hospitality-sector-to-adopt-green-practices (accessed on 13 July 2021).
- Mahmood, A.; Naveed, R.T.; Ahmad, N.; Scholz, M.; Khalique, M.; Adnan, M. Unleashing the barriers to CSR implementation in the sme sector of a developing economy: A thematic analysis approach. *Sustainability* 2021, 13, 12710. [CrossRef]

- 88. Ahmad, N.; Mahmood, A.; Han, H.; Ariza-Montes, A.; Vega-Muñoz, A.; Din, M.U.; Iqbal Khan, G.; Ullah, Z. Sustainability as a "new normal" for modern businesses: Are smes of pakistan ready to adopt it? *Sustainability* **2021**, *13*, 1944. [CrossRef]
- 89. IQAir. Air Quality in Pakistan. Available online: https://www.iqair.com/us/pakistan (accessed on 9 May 2021).
- Adnan, M.; Ahmad, N.; Scholz, M.; Khalique, M.; Naveed, R.T.; Han, H. Impact of substantive staging and communicative staging of sustainable servicescape on behavioral intentions of hotel customers through overall perceived image: A case of boutique hotels. *Int. J. Environ. Res. Public Health* 2021, 18, 9123.
- Awan, K.; Ahmad, N.; Naveed, R.T.; Scholz, M.; Adnan, M.; Han, H. The impact of work–family enrichment on subjective career success through job engagement: A case of banking sector. *Sustainability* 2021, 13, 8872. [CrossRef]
- 92. Ullah, Z.; Shah, N.A.; Khan, S.S.; Ahmad, N.; Scholz, M. Mapping institutional interventions to mitigate suicides: A study of causes and prevention. *Int. J. Environ. Res. Public Health* **2021**, *18*, 10880. [CrossRef]
- Alam, T.; Ullah, Z.; AlDhaen, F.S.; AlDhaen, E.; Ahmad, N.; Scholz, M. Towards explaining knowledge hiding through relationship conflict, frustration, and irritability: The case of public sector teaching hospitals. *Sustainability* 2021, 13, 12598. [CrossRef]
- 94. Ullah, Z.; Ahmad, N.; Scholz, M.; Ahmed, B.; Ahmad, I.; Usman, M. Perceived accuracy of electronic performance appraisal systems: The case of a non-for-profit organization from an emerging economy. *Sustainability* **2021**, *13*, 2109. [CrossRef]
- 95. Turker, D. Measuring corporate social responsibility: A scale development study. J. Bus. Ethics 2009, 85, 411–427. [CrossRef]
- 96. Lamm, E.; Tosti-Kharas, J.; Williams, E.G. Read this article, but don't print it: Organizational citizenship behavior toward the environment. *Group Organ. Manag.* 2013, *38*, 163–197. [CrossRef]
- Hu, L.t.; Bentler, P.M. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Struct. Equ. Modeling A Multidiscip. J. 1999, 6, 1–55. [CrossRef]
- Marsh, H.W.; Hau, K.-T.; Wen, Z. In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Struct. Equ. Model.* 2004, 11, 320–341. [CrossRef]
- Wheaton, B.; Muthen, B.; Alwin, D.F.; Summers, G.F. Assessing reliability and stability in panel models. Sociol. Methodol. 1977, 8, 84–136. [CrossRef]
- 100. Bentler, P.M.; Bonett, D.G. Significance tests and goodness of fit in the analysis of covariance structures. *Psychol. Bull.* **1980**, *88*, 588. [CrossRef]
- 101. Suganthi, L. Examining the relationship between corporate social responsibility, performance, employees' pro-environmental behavior at work with green practices as mediator. *J. Clean. Prod.* **2019**, 232, 739–750. [CrossRef]
- Farrukh, M.; Ansari, N.; Raza, A.; Wu, Y.; Wang, H. Fostering employee's pro-environmental behavior through green transformational leadership, green human resource management and environmental knowledge. *Technol. Forecast. Soc. Change* 2022, 179, 121643. [CrossRef]
- 103. Hameed, Z.; Naeem, R.M.; Hassan, M.; Naeem, M.; Nazim, M.; Maqbool, A. How GHRM is related to green creativity? A moderated mediation model of green transformational leadership and green perceived organizational support. *Int. J. Manpow.* 2021, *ahead-of-print*. [CrossRef]
- Aboramadan, M.; Karatepe, O.M. Green human resource management, perceived green organizational support and their effects on hotel employees' behavioral outcomes. *Int. J. Contemp. Hosp. Manag.* 2021, 33, 3199–3222. [CrossRef]