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# The Role of CSR and Ethical Leadership to Shape Employees' Pro-Environmental Behavior in the Era of Industry 4.0. A Case of the Banking Sector

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**Abstract:** The phenomenon of corporate social responsibility (CSR) is an ever-evolving concept due to its multidimensionality. However, a plethora of studies have investigated CSR to achieve different organizational-related objectives, and its potential link to shape employee's extra-role behavior, especially employee pro-environmental behavior (EB) in the era of Industry 4.0, is underexplored in the literature. To bridge this gap, the current study aims to explain the relationship between CSR and EB with the mediating role of ethical leadership (EL) in the banking sector of Pakistan. The data of the current survey were collected ( $n = 459$ ) from different banking employees within the city of Lahore through a self-administered questionnaire (paper-pencil technique). The hypotheses were validated through the structural equation modeling (SEM) technique in AMOS. The empirical results of the current study confirmed that CSR positively relates to EB, and EL partially mediates this relationship. These findings are helpful for professionals to realize the significance of CSR and EL to shape EB in order to mitigate the environmental footprint of an organization.

**Keywords:** CSR; ethical leadership; pro-environmental behavior; industry 4.0 bank; extra-role behavior

## 1. Introduction

Corporate social responsibility (CSR) has emerged as a widely recognized business imperative in the service industry [1]. In the context of the financial services sector, CSR is of paramount importance, as studies have shown that socially responsible financial institutions can better position themselves as compared to their rivals. CSR-specific initiatives are undertaken by an organization to earn a belief from all stakeholders that such moves will bring positive results for all stakeholders [2]. Employees are important stakeholders for the success of an organization [3]. Specifically, from the perspective of the banking sector, it has been reported that employees working for a socially responsible bank are more productive and engaged as compared to the employees of a bank that does not consider CSR as an important strategic enabler [4–7]. In times gone by, CSR did not receive due attention, however, various environment-related problems such as global warming and

climate change have pushed companies to embrace sustainability to lower their ecological footprints to preserve nature [8].

To this end, “The Paris agreement on climate change” may be assumed as an important development in which the leading global economies showed their consent to reduce the global temperature by 1.5 °C to 2 °C [9]. The sustenance of the natural environment is critical to humankind due to the fact that there is a continuous interaction between human beings and the environment. In this context, the behaviors of individuals towards nature determines the quality of an environment [10,11]. The inappropriate behavior of humans towards the environment is one of the critical reasons that gives rise to the issue of climate change [12,13]. Environmental protection and rehabilitation are the recent challenges modern society faces today, thus it is important to shape the environment-specific behavior of individuals, not only to preserve the natural environment, but also to rehabilitate it [12]. In an organizational context, as the employees have spent a significant amount of their daily time at their workplace, shaping their environment-related behavior can be helpful in mitigating the overall environmental footprint of an organization. Well established businesses devote significant funds to different CSR activities. Nevertheless, a CSR plan’s success and efficacy are contingent on employees’ involvement, who have a significant strategic function to reach multiple organization objectives [14]. This study is in agreement with Carroll, the founding father in the field, in defining CSR as “the economic, legal, ethical and philanthropic responsibility of an enterprise towards different stakeholders” [15,16]. It is crucial to engage the employees of an organization in different CSR-specific activities because, without an active engagement of internal stakeholders (employees, for instance), a company’s expectations of attaining sustainability objectives will not be successful [17]. Different scholars have acknowledged that internal stakeholders (employees) are critical for an organization in its implementation of CSR-specific programs [18,19]. Sila and Cek [20] have argued that CSR programs have gained their significance for achieving long-run economic success for an enterprise. Likewise, Afsar et al. [21] acknowledged the importance of employees to achieve different CSR-related objectives in the banking sector of Australia. Similarly, Asante Boadi et al. [7] conducted research in the banking industry of Ghana and came out with the findings that there is positive integration between the CSR activities of a bank and the employees [22,23]. In their recent research, Kong et al. [24] validated that CSR is an enabler that shapes the behavior of employees in the banking sector of Pakistan to reduce the environmental footprint of a bank. Although various studies have examined the impact of CSR activities on employee behavior and outcomes, most of these studies have focused on the direct relationship between CSR and employee outcomes [25,26], as well as the underlying psychological mechanism that explains findings.

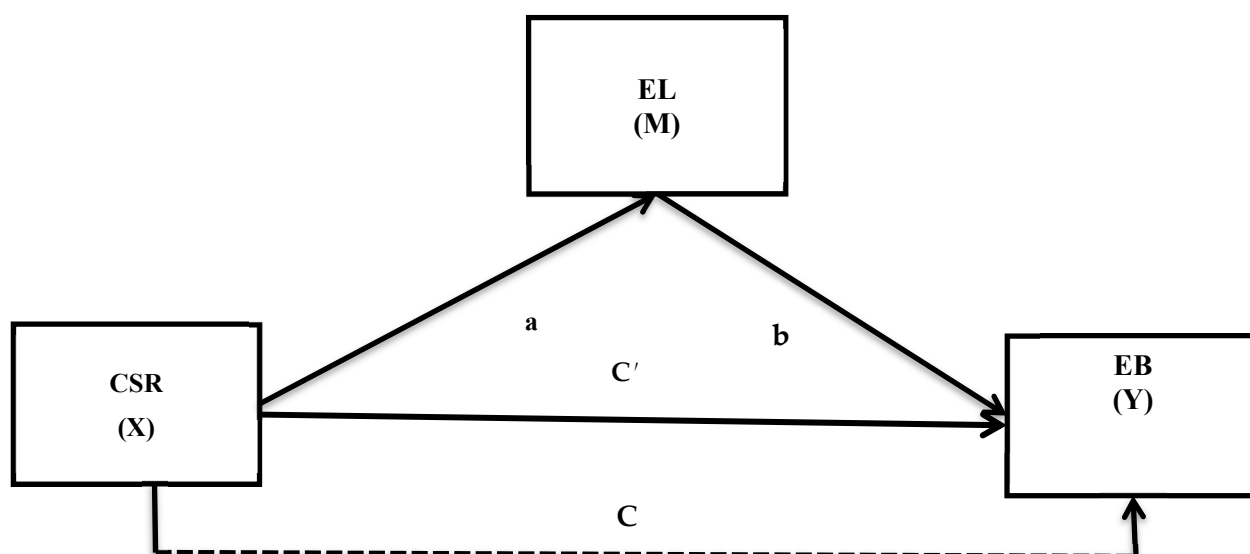
Scholars have also established that ethical leadership (EL) positively impacts employees’ behavior [27–29]. However, it is somehow not known how ethical leaders may influence their followers’ CSR-specific behaviors or, for example, employees’ pro-environmental behavior (EB). Some scholars have pointed out the importance of leadership to induce EB [30,31], however, these studies have been inconclusive. Thus, it is necessary to carry out more research in this field. Therefore, the basic aim of this study is to examine the relationship of employees’ CSR perception on EB, whilst the authors propose that EL mediates this relationship. The authors define EL in accordance with the definition of Brown et al. [32], who have stated that: “EL refers to a leadership style which is characterized by respect for ethical norms, values, and dignity for the employees through interactive communication and involving them into organizational decision making”. Whereas, the authors are in line with Kollmuss and Agyeman [33] to define EB as “it is the behavior of employees to minimize their negative impact on the natural and built world”.

The forth industrial revolution (industry 4.0) has been imposing new requirements for the behavior and adjustment of organizations. New technologies expressively change technological and management developments in the current era. It is inevitable for CSR practices to be synchronized with this new environment. Organizations are required to develop new strategies and initiatives to help to restructure their systems to better fit with

the scope of industry 4.0 [34]. The global movement such as sustainability and CSR, with its triple bottom line, and industry 4.0, advocates for the establishment of a ground of connection of CSR towards society [35]. In the current context, CSR is advantageous for enterprises by accelerating the implementation of actions related to sustainability and the fourth industrial revolution [36]. Likewise, the intervention of industry 4.0 is impacting all industries and sectors, redefining how businesses produce value. In this context, the implications for human resources and employees are critical. More specifically, the intervention of industry 4.0 is making a transition effect on human resources to change from being “steward of employment” to the “steward of work” to help businesses and communities assess the idea that work is performed in the greater interest of future generations, implying that the environment-specific behavior of employees is of much importance [37].

The current analysis was carried out in the banking segment of Pakistan, which was intentionally selected by the authors for the reason that Pakistan’s banking sector is a prominent sector where a structured CSR effort is evident. However, most of these efforts have been made to address the philanthropic orientation of CSR, neglecting the environmental consideration under the umbrella of CSR [38–44]. Thus, the consideration of this sector for the current study seems logical.

The current work may add to the existing literature in several ways. First, this analysis contributes to the available literature on CSR from employees’ perspectives. Most of the available literature has investigated CSR to achieve other organization-related outcomes including organizational performance [45–47], organizational efficiency [48,49], organizational reputation [50]. However, the relationship of CSR with employee behavior is relatively new to the literature. This analysis asserts that employees are key enablers to decrease a company’s ecological footprint, and thus the employees’ positive perception of CSR regarding their organization is very important for an organization to attain environmental sustainability. Second, it is not evident from the current literature how ethical leaders may help determine EB. There are some studies in the literature on the current topic, but the majority of such studies have been conducted in globally northern countries [51–53], and globally southern countries in this context have not received due attention. This analysis asserts that developing and developed countries are not alike, differing in resources, organizational arrangements, policies, capacities. Thus, generalizing the consequences of developed economies in developing countries has limitations. Third, the introduction of EL as a mediating variable in the proposed relationship (Figure 1) is also an important addition to the existing literature on CSR and organizational behavior. The authors’ argument here is that ethical leaders promote ethicality and transparency in a bank and help their employees by converting the workplace into a strong community in which each worker feels comfortable and works enthusiastically for the success of the bank. Thus, they willingly display different discretionary behaviors, one of which is EB. The rest of this study consists of the following components: The forthcoming section includes the literature review along with the theoretical framework. Next includes the methodology section, which copes with the sampling process, instruments, and data collection strategy. Next, there is the analysis section of this study, in which different analytical tools have been employed to find empirical results. The research’s final section is the discussion and implication section, where the authors have discussed the outcomes and consequences for theory and practice.



**Figure 1.** Proposed Research Model: CSR is the predictor (X) variable, EL is the mediating variable (M), EB is the criterion variable (Y), a= path from X to M, b = path from M to Y, C = direct path from X to Y in the absence of M, and C' = indirect path in the presence of M.

## 2. Literature Review

There have been different theories in the literature to explain employee pro-environmental behavior, including the theory of norm activation [54], the theory of reasoned action [55], and the theory of planned behavior (TPB) by Ajzen [56]. Among these theories, the most widely used is TPB, which explains the complex behavioral mechanism that transforms individuals from intentions to behaviors. This theory is also assumed to be an extended version of the theory of reasoned action, which argues that an individual's behavior takes shape from attitudes and subjective norms. In this context, the attitude refers to personal factors of the individual and the subjective norm is the perception of an individual that is shaped by different social entities, including peers, relatives, or institutions. Owing to its strong predictive power, this theory has been one of the pioneering theories that represent a model to predict intentions and behavior in different fields. Specifically, in the field of environment management, this theory contends that subjective norms and perceived behavioral cues play a crucial role in shaping an individual's intention to be engaged in EB. Chen [57] argued that the above-stated mechanism is reinforced to a further level by an individual's moral commitment towards EB. In an organizational context, the subjective norms of an individual are shaped by organizational norms (for example, CSR in the current case) and peers (leadership) that motivate employees to engage themselves in different environment-related tasks. In fact, Wesselink et al. [58] emphasized the importance of organizational support and leadership for the employees' environment-specific behavior. Therefore, CSR and EL are expected to shape EB by influencing their subjective norms.

### 2.1. CSR and Employees' Pro-Environmental Behavior

CSR is regarded as the organization's activities with which to enhance society beyond the state legislation [59]. Businesses that are actively engaged in different CSR activities are expected to receive multiple benefits, such as improved organizational performance [45], brand loyalty [60], cost efficiencies [61], and positive brand image [62]. In this regard, employees are at the heart of an organization to achieve every business' success [63–65]. A stream of scholars have acknowledged the importance of CSR to induce their pro-environmental behavior in the era of industry 4.0 [66–69]. CSR initiatives of an organization encourage the employees to practice such activities that can reduce environmental hazards, for example, by not using extra electricity, using double-sided prints on paper or avoiding

unnecessary prints, using stairs instead of electric escalators [66]. More specifically, Arnaud and Sekerka [70] have argued that an organization whose ethical values are in line with sustainability positively affect employees' behavior. The employees learn and practice such ethical values while they perform certain tasks at the workplace in order to develop the workplace as sustainable. In fact, Norton et al. [71] has mentioned that sustainable activities such as EB are expected to permeate workplace climate. Rupp et al. [72] mentioned that employees' CSR perception about their organization motivates them to practice morality at the workplace.

In line with the theory of TPB, the CSR engagement of an organization infuses positive emotions among employees. When they see that the organization is concerned about affecting the environment positively through various CSR activities, they are motivated to support their organization. The employees feel that their organization is benefiting society and the environment and hence want to return their organization positively by performing different discretionary roles towards the environment. Scholars such as Yuriev et al. [73], Aziz et al. [74], and Ateş [75] have also acknowledged the importance of TPB in shaping the pro-environmental behavior of employees in the era of industry 4.0 positively. Hence, in accordance with the theory of planned behavior, CSR activities of the organization are favorably appraised by employees, and, consequently, are coined into the company favorably. Therefore, the following hypothesis is suggested:

**Hypothesis 1 (H1).** *Employees' CSR perceptions of their organization positively relate to EB.*

## 2.2. CSR and Ethical Leadership

Beyond stakeholder management, an important aspect of a socially responsible organization is the development of leaders who can promote ethicality within an organization [76]. An organizational culture characterized by CSR and ethical leadership is expected to set the real tone for sustainability and long-term productivity for all stakeholders, including employees [77]. A socially responsible organization treats its workforce (including corporate leaders) with care and respect, which inculcates a positive feeling among the workforce [78]. Corporate leaders are treated as valued-resource in a socially responsible organization. This valued treatment of corporate leaders is something that turns them into happy workers, and they willingly engage themselves in ethical practices while they deal with their employees in a workplace setting [79,80]. Thus, engaging employees effectively in achieving corporate objectives, including sustainability, is the hallmark of a socially responsible organization [81]. Various researchers have argued about the direct association of CSR and ethical leadership [82–84]. To conclude, CSR as a business system can generate real returns for all stakeholders by implementing ethical values and sustainable work practices in an organization [85–88]. This notion of a socially responsible organization which works in the larger interest of society and the environment is transmitted to the corporate leaders and they, in turn, learn this ethical behavior on their part. Consequently, corporate leaders are expected to engage in ethical practices. The above arguments encouraged the authors to formulate the following hypothesis:

**Hypothesis 2 (H2).** *CSR activities of an organization positively relates to ethical leadership.*

## 2.3. Ethical Leadership and Pro-Environmental Behavior

As per the observation of Brown and Treviño [89], the normative appropriate conduct of an ethical leader is characterized by their orientation towards the well-being of others. Therefore, the ethical leader is expected to focus on the well-being of their followers in the workplace (employees in the current case), rather than focusing on their self-interest [90,91]. In this regard, a socially responsible organization pays great attention to promoting ethicality in the workplace and encourages corporate leaders to be ethical while they are at the workplace [82]. The engagement of an organization in different CSR activities is well regarded by corporate leaders, and they understand that their organization



is really concerned with the well-being of all stakeholders [92]. Employees are important stakeholders that have their strategic importance in an organization for achieving different business objectives [93]. Realizing this fact, that employees are important stakeholders, and observing the seriousness of an organization towards CSR orientation, an ethical leader engages himself in different acts of well-being in the workplace [94]. A socially responsible organization is committed to sharing value congruence with corporate leaders, and, in return, the leaders are motivated to promote ethicality in the workplace [76]. As mentioned earlier, an ethical leader is expected to promote ethicality in an organization, and this ethical behavior is expected to be learned by the followers. In this regard, the authors argue here that ethical leaders not only engage themselves in ethical practices, but that they also give a clear understanding to their followers about the importance of such ethical conduct for the larger benefits of various stakeholders, including the community and the environment [95]. Moreover, the ethical leaders act as a role models for their employees, and the authors posit that this process of role modeling is helpful to explain the underlying mechanism in which employees match themselves with their ethical leader. Thus, employees are expected to practice such attitudes and behaviors that are not only beneficial for the organization, but also for the community and the environment too. Several other scholars have also acknowledged that, in the presence of an ethical leader, the employees' extra-role performance is induced [96–98]. Thus, the following hypothesis is proposed:

**Hypothesis 3 (H3).** *Ethical leadership positively influences the pro-environmental behavior of the employees.*

#### 2.4. Ethical Leadership as a Mediator

Prior literature demonstrates that organizations may influence employees' perceptions of CSR-related activities through the ethical conduct of corporate leaders [82,99,100]. Corporate leaders are under continuous pressure to make certain that their company adheres to societal standards that are maintained at all levels [80]. Many scholars have extended this debate, implying that the societal responsibility of a company needs to be contingent on the organizational culture that is derived from organizational norms and ethics [101–104]. Choosing an accurate leadership style within an organization may increase employees' involvement in CSR-related activities. Corporate leaders play an important part in engaging their employees in different CSR tasks [105]. Additionally, the values and attitudes of leaders supporting CSR practices influences the participation of the followers in CSR-related actions [21]. To achieve CSR-specific outcomes, the enterprises need leaders who are ethical and are capable of advocating followers to participate in extra-role or voluntary behaviors. Ethical leaders are expected to promote their followers' ethical conduct, supporting them to be an ethical personality who positively contributes to preserving society and nature [106]. Ethical leaders are regarded as key enactors for the development and execution of CSR-related activities in an enterprise. Thus, ethical leaders establish a benchmark for their followers and have an impact on their behavior by establishing organizational standards in their particular environment [82]. Hence, ethical leaders may advocate for their employees to take part in CSR initiatives. Ethical leaders are essential for boosting ethical values because they encourage businesses to be much more socially and environmentally responsive. An ethical leader might be CSR-oriented, mimicking and encouraging the behavior of the followers to preserve the environment [107].

Ethical leadership in an organization is expected to bring multiple benefits, and one of such benefits is the inspiring of the employees to exhibit pro-environmental behavior in the era of industry 4.0 [19]. Ethical leaders highlight the value of morality among their followers. Therefore, when employees observe their leaders' ethical behavior, their subjective norms take shape positively, and they are also expected to engage themselves in such behaviors that can positively support their organization's commitment to improving its environmental footprint. Besides, ethical leaders highlight the value of responsibility by holding employees responsible for their activities. Studies have established that the

process of role-modeling helps shape employees' behavior [21,95]. Put simply, the authors asserted that TPB helps employees to be more engaged in pro-environmental behavior in the era of industry 4.0. As followers appreciate their leader's ethical behavior as a role model, they are anticipated to practice such environmentally friendly behavior. Therefore, the following hypotheses and research model (Figure 1) are suggested:

**Hypothesis 4 (H4).** *Ethical leadership mediates the relationship between CSR and employees' pro-environmental behavior.*

### 3. Methodology

Officially, there are two major banking systems in Pakistan: one is regarded as the conventional commercial banking system, and the other one is regarded as the Islamic banking system. There is another, illegal, financial mechanism called "Hawala". The "Hawala" system is another form of payment that transfers money to an underground bank and supports illegal circles in achieving their illegal goals. It is based on trust, which supports and distributes its operations outside or in conjunction with ordinary banks or financial institutions [108]. The "Hawala" system was used in many regions and has traditionally been associated with the method of transferring money (transferring cash without involving real money or any telephone transfer), which has been very active for many decades and still exists in the different countries of South Asia. According to the United Nations' Human Development Index, Pakistan is on the lower side in this index. The country is fighting against money laundering, which is supported by "Hawala" [109]. The State Bank of Pakistan (SBP) reported that the money transferred through Hawala/Hundi system is likely to be used for money laundering. The Pakistani government has taken various measures to prevent the "Hawala" system. Under the Pakistan Foreign Exchange Transactions Act of 1947, all informal value transfer systems (IVTS) are illegal, because such practices produce a negative impact on the financial system of the country. SBP and the Securities Exchange Commission of Pakistan (SECP) are the most important financial regulators in the country. They have set up anti-money laundering units to improve supervision of the financial sector. Further, they have prioritized their focus on managing the Hawala program. The SBP has been guided by policies to reduce the incidence of alternative remittance systems in Pakistan and has promoted the use of formal channels for remittances. The SBP has stressed the establishing of exchange companies to encourage informal money exchange offices to join the main financial system in order to discourage "Hawala" [110]. Despite these initiatives, this evil system of "Hawala" still prevails in the country.

The overall financial industry is dominated by the conventional commercial banking system, which constitutes almost 85% of the total banking sector in the country [111]. The basic difference of these two major banking streams is the orientation of interest-free banking (the Islamic banking system) and the interest-based banking system (the conventional commercial banking system). The current study selected the five largest conventional commercial banks to test the hypothesized relationships of the model (Figure 1). These included Habib Bank Limited (HBL), Allied Bank Limited (ABL), United Bank Limited (UBL), National Bank of Pakistan, and MCB Bank Limited.

These banks were intentionally selected due to three reasons: First, all of these banks were actively involved in different CSR activities. The researchers verified their CSR engagement through personal visits to these banks and by collecting information from their web pages. Second, these banks constitute the largest (more than 55%) share of the banking industry [112]. HBL is the largest banking operator in Pakistan which constitutes more than 1700 branches all over the country and with an asset worth of 3297 billion in Pakistan rupees (PKR) [113]. NBP is second in the list of the largest banks in the country, with more than 1450 branches and an asset worth of PKR 3100 billion [114]. MCB is the third-largest bank with more than 1400 branches, but its total asset worth is relatively low (PKR 1667.6 billion) compared to UBL [115]. UBL comes fourth in the list with 1390 branches and a total asset

worth of PKR 1620 billion [116]. The last sampled bank in the list of the current study is ABL, with more than 1350 branches and an asset worth of PKR 1481 billion [117].

Third, these banks have established their branches almost in every city of Pakistan. The data were mainly collected from the city of Lahore, which is the second largest city in Pakistan. The city of Lahore was also selected logically to serve the purpose of the current study. In recent years, this city has become one of the largest victims of changing climatic conditions. The city has been announced as the most pollutant city in the world [118]. The city represents millions of people whose overall health is at risk because of the rising pollution issue. Thus, serious considerations are essential at every level to mitigate this issue of pollution.

Before the data collection process, the authors contacted spokespersons of the sampled banks to get their approval and consent to collect the data from their employees. The authors received informed consent from each employee to take part in the survey voluntarily. The outbreak of COVID-19 in the country posed a severe challenge to the authors during the data collection process. The authors had to stay for long hours because they had to follow special safety instructions due to the second wave of COVID-19 in the country. The authors, with the mutual adjustment of the competent authorities, approached the sampled staff of a bank mostly during breaktimes or during closingtime. In most cases, the meeting room of a bank was used for the sake of data collection, with a 50% seating capacity to observe social distancing due to COVID-19. The researchers assured the respondents that their information would not be disclosed to anyone and that the anonymity of the data would be highly maintained. Moreover, every respondent was given an equal choice to quit the survey at any stage if he or she felt uncomfortable in sharing the information. The data were collected from different branches of the selected banks within the city of Lahore during December 2020 and January 2021. The authors served the respondents with the printed version of the questionnaire (paper–pencil). Initially, a total of 700 questionnaires were distributed, and the authors were able to receive 459 questionnaires. Hence, the response rate of this study remained at 65.57%. The current study followed the ethical guidelines, as per the Helsinki Declaration.

#### *Measures and Addressing the Issue of Social Desirability*

This analysis borrowed the scales from the existing research studies, so the instrument's validity and reliability were pre-tested. The authors borrowed the scale of ETL from Brown et al. [32]. This scale was composed of ten items with a reliability value of 0.88, which was calculated with the help of Cronbach alpha ( $\alpha$ ). Various researchers have used this scale to operationalize ETL in banking contexts. For example, Abuzaid [119] used this scale in his study to measure ETL in the banking sector of Jordan. Likewise, Alpkan et al. [120] operationalized ETL in their research by using the same scale in the context of the Turkish banking sector.

The scale of EB was borrowed from Bissing-Olson et al. [121], which consisted of three items. This scale was originally proposed by Williams and Anderson [122], however, Bissing-Olson et al. [121] modified it from the perspective of pro-environmental behavior in the era of industry 4.0. The reliability of this scale was 0.78, which showed that there was good inter-item consistency among the items of EB. Other researchers have also used this modified scale in their research studies. For example, Ahmad et al. [8] measured EB in the context of the banking sector of Pakistan. Lastly, the scale of CSR was borrowed from Fombrun et al. [123]. This scale showed a reliability value of 0.80, which making it evident that the items of CSR are consistent with each other. This scale also consisted of three items. A five-point Likert scale was employed to record the responses.

In order to deal with the dilemma of social desirability, the authors took several steps. As an example, the questionnaire items were randomly distributed throughout the questionnaire. The authors did so in order to break any string on the part of respondents in replying to the questions. This measure can also help to cope with the likelihood of any liking and disliking for a specific construct. In like manner, the questionnaire was



evaluated by the experts in the field to detect any ambiguity or complexity in any statement of the questionnaire. Likewise, the authors requested the respondents to their authentic response so that a genuine response may be recorded, which is very important for drawing the study's results and implications. Various scholars also advocate for these measures to mitigate social desirability [66,124–126]. The demographic detail of the sample is presented in Table 1.

**Table 1.** Demographic detail.

Demographic	Frequency	%
<b>Gender</b>		
Male	273	59.48
Female	186	40.52
<b>Age-group (Year)</b>		
22–25	56	12.20
26–30	109	23.75
31–35	139	30.28
36–40	92	20.04
Above 40	63	13.72
<b>Experience (Years)</b>		
1–4	76	16.56
5–7	173	37.69
8–10	114	24.84
Above 10	96	20.70
<b>Category</b>		
Manager	167	36.38
Non-Manager	292	63.62
<b>Total</b>	459	100

## 4. Results

### 4.1. Detecting for Common Method Bias

The data for this survey were collected from the same individual for all variables. Thus, the potential risk of common method bias (CMB) may exist. Therefore, the authors decided to perform a Harman single-factor analysis to validate whether any potential issue of CMB exists. For this reason, the authors loaded all the items of the current study onto a single factor to detect the presence of any single dominant factor [127]. Following the guidelines of single-factor analysis, the authors evaluated an un-rotated factor solution in order to attain the number of factors that were having eigenvalues beyond 1. The assumption of single-factor analysis is that, if CMB exists, there will be one single dominant factor that will explain more than 50% of the covariance between the survey items and the criterion construct(s) [128]. The output of the single-factor analysis showed that there was no such dominant factor that shared more than 50% of the total variance. In this regard, the maximum variance shared by a single factor was 43.26%, which is below the threshold level of 50%. Hence, based on the output of single-factor analysis, the authors established that CMB is not a potential threat in the dataset of the current study.

### 4.2. Convergent Validity, Factor Loadings, and the Reliability Analyses

The authors, after verifying that the potential threat of CMB is not serious in this analysis, continued to the next phases of data analysis. In this regard, Table 2 presents various results, including factor loadings, convergent validity, and the results of reliability analysis. So far as the factor loadings are concerned, the authors performed principal component analysis (PCA) through varimax rotation and assessed if there were some items with weak factor loadings ( $\lambda < 0.5$ ). The results revealed that there is no issue with factor loadings, as all the items maintained their loadings well above the minimum criterion. Further, the results of convergent validity (CV) are also presented in Table 2. To do this, the authors verified CV by calculating the average variance extracted (AVE) for each variable. The standard practice to validate CV is that, if the AVE of a variable is above 0.5, then

this variable has no issue regarding CV. As it can be seen from Table 2, all the variables maintained their AVE values, which were above 0.5. Lastly, the authors also calculated composite reliability (CR) for each variable and found that all values of CR were beyond the cut-off level of 0.7.

**Table 2.** Factor loading, convergent validity, and reliability analyses.

Items	Loadings	Square	SS	AVE	CR
Bank really cares about its employees (CSR1)	0.83	0.69			
Bank contributes the communities in which it operates (CSR2)	0.72	0.52			
Bank is environmentally responsible (CSR3)	0.77	0.59	1.80	0.60	0.82
Leader listens to what employees have to say (EL1)	0.73	0.53			
Leader disciplines employees who violate ethical standards (EL2)	0.77	0.59			
Leader conducts in an ethical manner (EL3)	0.69	0.48			
Leader shows interest for employees (EL4)	0.72	0.52			
Leader makes fair and balanced decisions (ETL5)	0.71	0.50			
Leader can be trusted (EL6)	0.78	0.61			
Leader discusses business ethics or values with employees (EL7)	0.80	0.64			
Leader sets an example to do things ethically (EL8)	0.82	0.67			
Leader defines success not just by results but also the way that they are obtained (EL9)	0.82	0.67			
Leader when making decisions, asks employees (EL10)	0.74	0.55	5.71	0.57	0.93
Completion of job tasks in environmentally-friendly manner (EB1)	0.77	0.59			
Consideration of environment during workplace (EB2)	0.71	0.50			
Efforts to align with organization to improve the environment (EB3)	0.86	0.74	1.84	0.61	0.82

**Notes:** Loadings = factor loadings; CR = composite reliability; Square = square of item loading; SS = sum of square.

In the next phase of the data analysis, the authors carried out correlation analysis (Table 3). The results validated that all variables of the current survey had positive correlations, which is an encouraging thing in the context of hypotheses testing. For example, the correlation between CSR and ETL is 0.31\*\*, which is positive, implying that both these variables are correlated with each other positively. The authors also checked the discriminant validity (DV) of the current analysis. To do this, the AVE values were used again. This time, the authors took the square root for each AVE and compared it with the values of correlation in comparison. The rule here is that, if the outcome of the square root of AVE is greater than the inter-correlations, then the criterion for DV is validated. In this regard, one can see that the value of the DV for CSR is 0.77, which is greater than the correlation values (0.31\*\*, 0.38\*\*) in comparison, establishing that there is no issue of DV in this analysis. Furthermore, the results of the different model fit indices (MFI) during the confirmatory factor analysis (CFA) were also considerably significant ( $\chi^2/df = 3.681$ , RMSEA = 0.063, NFI = 0.931, CFI = 0.937, IFI = 0.938, TLI = 0.936, GFI = 0.933).

**Table 3.** Correlation, discriminant validity, and model fit indices.

Construct	Mean	SD	CSR	EL	EB
CSR	3.96	0.66	<b>0.77</b>	0.31 **	0.38 **
EL	4.18	0.71		<b>0.75</b>	0.29 **
EB	3.98	0.59			<b>0.88</b>
Model fit indices	Range	Obtained	Model fit indices	Range	Obtained
$\chi^2/df$	5.00	3.681	IFI	0.90	0.938
RMSEA	0.08	0.063	TLI	0.90	0.936
NFI	0.90	0.931	GFI	0.90	0.933
CFI	0.90	0.937			

Notes: SD = standard deviation; \*\* = significant values of correlation; Bold diagonal = discriminant validity results.

### 4.3. Hypotheses Testing

The results of confirmatory factor analysis, correlation analysis, along with the reliability and validity results, encouraged the authors to carry out the data analysis phase to the next level. Hence, the authors performed the final phase of data analysis to test the hypotheses of the current study. In doing so, the authors applied the structural equation modeling technique (SEM) in AMOS software. SEM is acknowledged as an advanced level co-variance-based technique to handle complex models including moderators and mediators. SEM is a widely used technique in the recent era [129–131], as it contains more sophisticated features compared to conventional regression analysis. In this regard, the authors performed SEM analysis in two steps to confirm the hypotheses of this study. In the first step, the authors evaluated the structural model for direct effects to assess the results for Hypotheses 1 (H1), 2 (H2), and 3 (H3). The results (Table 4) revealed that Hypotheses H1, H2, and H3 are accepted. These results were drawn on the basis of beta values and  $p$ -values for H1, H2, and H3 ( $\beta_1 = 0.37^{**}$ ,  $p < 0.05$ ;  $\beta_2 = 0.15^{**}$ ,  $p < 0.05$ ;  $\beta_3 = 0.46^{**}$ ,  $p < 0.05$ ). Furthermore, the results of the model fit indices were also within acceptable ranges ( $\chi^2/df = 3.19$ , RMSEA = 0.053, NFI = 0.938, CFI = 0.943, IFI = 0.947, TLI = 0.942, GFI = 0.942). Based on the above empirical findings, the authors state that the first three hypotheses of the current study are accepted.

**Table 4.** The results for Hypotheses 1 and 2.

Path	Estimates	SE	CR	p-Value	LLCI	ULCI	Decision
CSR→EB (H1)	(β1) 0.37 **	0.046	8.04	***	0.316	0.528	Accepted
CSR→EL (H2)	(β2) 0.15 **	0.022	6.82	***	0.181	0.363	Accepted
ETL→EB (H3)	(β3) 0.46 **	0.031	10.32	***	0.291	0.488	Accepted
Model fit indices	Range	Obtained	Model fit indices	Range	Obtained		
χ²/df	5.00	3.19	IFI	0.90	0.947		
RMSEA	0.08	0.053	TLI	0.90	0.942		
NFI	0.90	0.938	GFI	0.90	0.942		
CFI	0.90	0.943					

**Notes:** ULCI = upper-limit confidence interval; LLCI = lower-limit confidence interval; \*\*, \*\*\* = significant values; SE = standard error.

In the second step of structural analysis, the authors evaluated the model for testing the mediating effect of EL between CSR and EB. The authors used the bootstrapping approach to confirm the mediating effect of ETL. This approach is more preferred by contemporary scholars in comparison to the traditional method of mediation analysis described by Baron and Kenny [132], which receives critiques from Hayes [133], Zhao et al. [134], and others. The basic issue in the approach of Baron and Kenny's method of mediation analysis lies with its inferior power to explain the relationship, the bootstrapping method. The authors selected a larger bootstrapping sample of 2000 to test the mediation effect. The bootstrapping output validated that there is a partial mediation effect of EL between the proposed relationship of CSR and EB. The partial mediation effect confirmed the beta value, which was  $\beta_1 = 0.37^{**}$ , and the direct effect model reduced to  $\beta_3 = 0.069^{**}$  after the introduction of mediator (EL), though remained significant. These results have been presented in Table 5 by the authors. Furthermore, the results of the model fit the indices for the three factor structural model (model with a mediating effect), and produced the most appropriate results ( $\chi^2/df = 2.91$ , RMSEA = 0.042, NFI = 0.938, CFI = 0.948, IFI = 0.946, TLI = 0.946, GFI = 0.942). Thus, all hypotheses (H1, H2, H3, H4) of this study are accepted. Please refer to Figure 2.

Table 5. Mediation results for H4.

Path	Estimates	SE	Z-Score	p-Value	LLCI	ULCI	Decision
CSR→EL→EB (H4)	( $\beta$ ) 0.069 **	0.021	2.28	***	0.036	0.183	Accepted
Model fit indices	Range	Obtained	Model fit indices	Range	Obtained		
$\chi^2/df$	5.00	2.91	IFI	0.90	0.948		
RMSEA	0.08	0.042	TLI	0.90	0.946		
NFI	0.90	0.938	GFI	0.90	0.942		

Notes: ULCI = upper-limit confidence interval; LLCI = lower-limit confidence interval; \*\*, \*\*\* = significant values; SE = standard error.

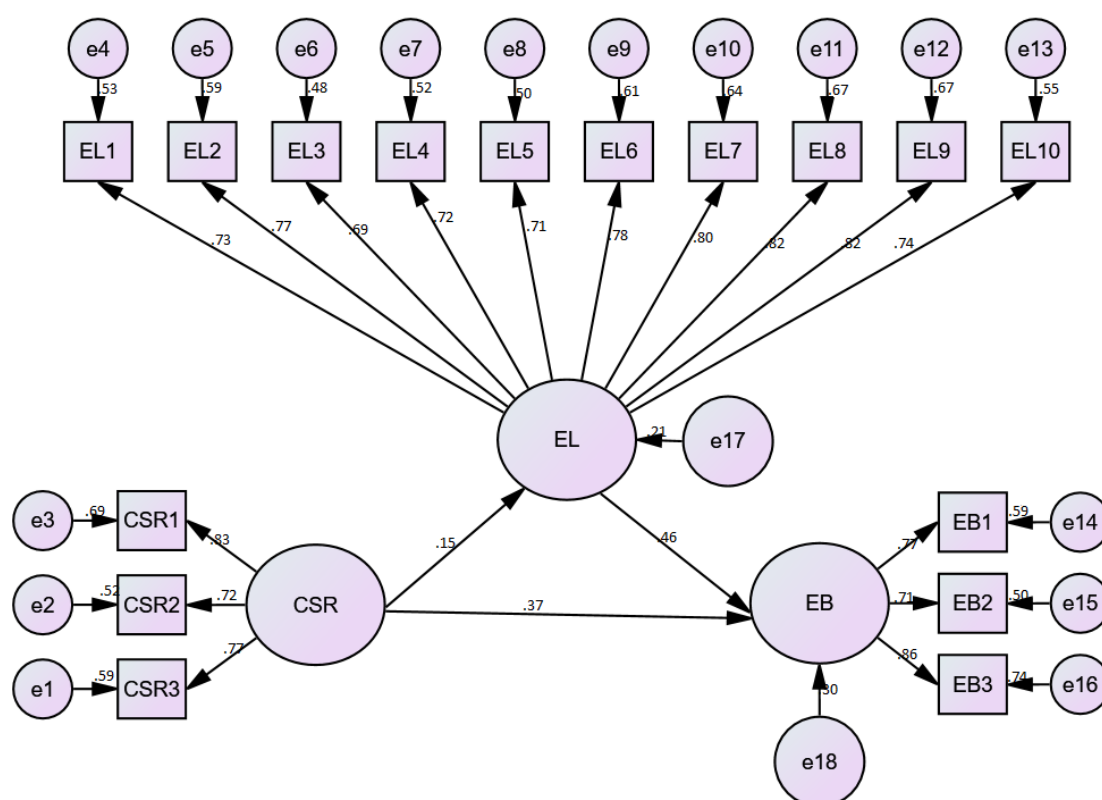


Figure 2. The structural model of the current analysis.

## 5. Discussion and Implications

This study was carried out to examine the impact of CSR on EB with the intervening effect of EL in the banking segment of Pakistan. The outcomes of the present survey confirmed that the CSR perception of employees positively influences the pro-environmental behavior of employees serving in different banks of Pakistan in the era of industry 4.0. The CSR engagement of a bank plays an integral part in shaping the behavior of employees towards nature. Thus, they voluntarily engage themselves in different discretionary behaviors associated with environmental up-gradation. The authors explain this finding with the help of TPB. Following this theory, when employees notice CSR engagement of their bank, they believe that their company is benefiting nature and society. This belief of the employees about their organization influences their subjective norms positively, and employees, under the influence of their subjective norms as a result of CSR, are motivated to be engaged in different extra-roles, including their pro-environmental behavior in the era of industry 4.0 [73,135].

Likewise, the existing survey results also affirmed the significance of EL to encourage the employees at the workplace to show eco-friendly behaviors. Ethical leaders promote ethicality, and they are likely to set a standard for their followers by displaying their ethical

behavior. Employees perceive their leaders as role models and so they copy the behavior of their leader. Following TPB, corporate leaders in an organization attempt to satisfy the needs of the stakeholders, including employees. In this regard, they are expected to incorporate the CSR strategies of an organization in a way that positively influences the workforce. Moreover, the leadership (ethical leadership, in the current case) in an organization is the main driver from the standpoint of CSR, as they demonstrate ethical conduct which is closely related to the philosophy of CSR to best protect the interest of all stakeholders. Therefore, in line with TPB, the leadership positively influences the subjective norms of the followers (employees), and all this process eventually shapes their behavioral intentions towards the environment [136,137]. Hence, in light of the above literary discussion, and from the findings of the current study, it is evident that the CSR perception of the employees is positively related to EB in the banking sector of Pakistan, and that the phenomenon of ethical leadership produces a mediating effect in this regard. Moreover, the empirical findings of the current study also highlight the importance of CSR orientation in an organization for corporate leaders. In this regard, when the leaders find that their organization is a socially responsible entity that works for the well-being of all stakeholders, including the internal stakeholders (employees), they gain this clarity in their mind that they have to create a supportive environment for their followers at the workplace. Thus, ethical leaders of a socially responsible organization are expected to display caring and supportive behavior towards their followers, which influences their subjective norms positively, and are urged to support their socially responsible organization by engaging them in extra-role activities. One such activity is socially responsible behavior or, in other words, pro-environmental behavior, in the era of industry 4.0. Other researchers have also acknowledged the above finding [82,92,94].

This analysis has some significant contributions to theory and practice. The first theoretical contribution of this analysis is the fact that it enriches the existing CSR literature from the perspective of employees, whereas the majority of the previous studies on the present topic have addressed CSR to attain other objectives instead of focusing on employees [45,46,138–140]. Moreover, employees' perception of CSR in the service industry has not been well explored in the available literature, therefore the current analysis is also an important addition to the literature from this perspective, in that it considers the service sector—most of the previous studies in this connection were carried out in the manufacturing sector [28,138,141]. Similarly, the inclusion of ethical leadership as a mediator in the proposed relationship from the perspective of the banking sector also provides a unique insight into the existing literature on CSR and organizational management. There have been different studies highlighting the importance of ethical leadership to promote the pro-environmental behavior of employees in the era of industry 4.0 [142–145]. However, the banking sector has remained deprived and has not received due attention in this regard.

The study also has some important implications for professionals. The first practical implication of this analysis is the fact that it highlights the significance of CSR for banking professionals to attain their sustainability goals through workers. In this regard, most of the banking sector of Pakistan spends its CSR funds for philanthropic purposes, for example, the supporting of community education, the installment of water filtration plants, and other charity-related causes for the community. However, improving the environment through different interventions of CSR is something that is least considered by this sector [86,88,146–149]. The current study in this regard provides fresh insight to the banking policymakers in improving the environment through CSR activities. The current study especially highlights the importance of employees to achieve a sustainable environment and to preserve nature for future generations. This implication has a special importance for the country because Pakistan is one of those countries in the world which is observing an abnormal change in climatic conditions. Another practical implication of this analysis is the fact that it highlights the value of ethical leadership to shape the ethical behavior of the workforce. The findings of this survey have confirmed that employees consider their leader as a role model and, hence, they imitate the conduct of their leader. Thus, if the leaders from



the banking sector are aware of the fact that their ethical behavior is important to influence their followers, they can help their banks to achieve sustainability objectives. Therefore, the policymakers need to arrange for different seminars and workshops for their leaders to spot the significance of their ethical conduct for a better and sustainable future. Lastly, the study was conducted during a time period in which the COVID-19 pandemic posed several challenges for all economies of the world, and even the established economies (USA) were struggling. Moreover, sectors such as tourism, air industry, and hotel sectors were largely hit by this pandemic. However, due to the widespread conditions of the pandemic in most regions of the world, environmental pollution, especially air pollution, was significantly reduced because there was almost no air-traveling between the different countries of the world. However, the use of plastic is on increase due to the extra usage of different protection-related accessories (such as gloves and other materials) during the pandemic. In this regard, the management is suggested to sit and decide the optimum level of such utilization by the employees. Likewise, it is also to be suggested to use protection material (face mask, shield, or gloves) that is produced using eco-friendly material.

### *5.1. Limitations and Potential Research Directions*

The current analysis encountered some limitations which, the authors feel, open new avenues for upcoming researchers in the same field. In this regard, one limitation is that the current analysis attempts to explain the employee behavior (EB) with the help of two constructs, and therefore adding more variables in the proposed model of the current analysis is suggested in future studies. For instance, the authors suggest including employees' meaningfulness of work, quality of work, and employees' perception of life satisfaction to be included in future studies as mediators or moderators. Another limitation of the current analysis lies in its geographical concentration, as the current analysis only considered Lahore city due to the fact that the study was conducted at the time when COVID-19 was at its peak in the country and when movement in other cities was restricted. In this regard, the authors suggest including some more cities in the sample for future studies. Similarly, the current analysis was quantitative in nature. The existing scales were adapted from previous studies published in journals with good reputations. As evidenced in the present study, the utilized scales maintained an adequate level of reliability and validity. However, employing a qualitative approach for the measurement of modification process and the refinement of the existing measures is more desirable to address how operationalizing the constructs with other measures beyond that which the authors used could contribute towards a better accuracy in regards to Pakistani context. Lastly, it will be of great worth if, in future studies, the electronic version of the questionnaire can be employed for data collection.

### *5.2. Conclusions*

The current study highlighted the importance of CSR and EL to shape the employee extra-role behavior, especially their pro-environmental behavior towards the banking sector of Pakistan. Specifically, the study highlighted the mediating role of leadership between the relationship of CSR and EB, giving the fact that organizations get things done through corporate leaders at different layers in the organizational hierarchy. The study is an attempt to bring forth the role of employees in mitigating the environmental footprint of an organization through their pro-environmental behavior in the era of industry 4.0. Specifically, the current study brings to the forefront the role of financial services sector, especially the banking sector, in which it is important to mitigate environmental vulnerability in the country. Given that this sector is a human intensive sector, and if the employees of this sector can show a better and environmentally friendly behavior, a sustainable, climate-friendly future in the country may be hoped. On a final note, the finding of the current study may be helpful to other developing nations with the same banking setup, for example, Bangladesh, which is also facing the same kind of environmental challenges as encountered by Pakistan.

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