Employees’ environmentally responsible behavior: the critical role of environmental justice perception

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ABSTRACT

The environmentally responsible behavior of employees at the workplace can benefit business organizations in particular and society in general. According to previous studies, positive psychological capital has been used frequently for predicting employees’ work attitudes and behaviors. In this article, we are seeking to understand whether people with a higher (lower) level of positive psychological capital—hopeful thinking, optimism, and resilience—engage more (less) in environmentally responsible behaviors in the workplace especially when they perceived a high (low) level of environmental justice To test the study hypotheses, we collected survey data from 196 randomly selected employees working in 35 private small-sized businesses in Bangladesh. This study showed that employees with higher levels of positive psychological capital engage more in environmentally responsible behaviors at the workplace. The results showed that when employees are treated fairly in the workplace, those with a high level of hopeful thinking and resilience are more likely to engage in environmentally responsible behaviors at work.

Introduction

The importance of employees’ engagement in environmentally responsible behaviors at work has been widely addressed in previous studies (Lülfs and Hahn 2013; Paillé and Boiral 2013; Lamm, Tosti-Kharas, and King 2015; De Roeck and Farooq 2018). Environmentally responsible behaviors describe the voluntary conduct that goes beyond the employees’ formal job descriptions and have a substantial impact on the improvement of the work environment such as making innovative suggestions to improve the organization’s environmental performance, informing management of potentially environmentally irresponsible policies, willing to speak up when policy or rules do not contribute to the achievement of the organization’s environmental goals, and frequently suggesting revisions to work practices to achieve the organization’s environmental objectives. In particular, these types of behaviors can contribute positively to energy-consumption reduction (Scherba, Popovich, and Finlinsen 2008) and environmental performance (Singh et al. 2019). In general, it can help society through environmental pollution reduction (Swim et al. 2011) and preservation of the natural environment (Robertson and Barling 2017).

Employees are the heart of comprehensive corporate greening activities (Lülfs and Hahn 2013). The effectiveness of organizational sustainability-oriented policies highly depends on employees’ strong contributions and support (Lamm, Tosti-Kharas, and King 2015), particularly the voluntary and discretionary contributions that go beyond the formal reward and performance-evaluation system (Daily, Bishop, and Govindarajulu 2009; Lamm, Tosti-Kharas, and King 2015). Therefore, it is important to identify those employees who engage in environmentally responsible behaviors at work. First, employees’ engagement in involuntary and unrewarded green behaviors is a pre-step for the emergence of sustainable or green organizations (Lülfs and Hahn 2013; Paillé and Boiral 2013; Paillé et al. 2014; Temminck, Mearns, and Fruhen 2015). Second, exhibiting environmentally responsible behaviors—for instance reducing energy consumption—can motivate other workers in the workplace to become involved in such environmentally friendly behaviors (Boiral and Paillé 2012). Third, the voluntary involvement in green behaviors, such as conserving organizational resources and avoiding harm, can help to save costs (Norton et al. 2015) and improve the firms’ financial performance (Albertini 2013).
Environmentally responsible behaviors can contribute positively to the quality of life of current and future generations (Schäpke and Rauschmayer 2014; Jahanshahi et al. 2017). Encouraging these types of behaviors eventually may lead to better protection of the environment and has the potential to improve societal well-being (Koehler and Hecht 2006). In this regard, Corral-Verdugo (2012) believed that environmentally responsible behavior is a type of positive behavior at work that originated mostly by positive dispositional factors. Supporting this argument, there are several studies that emphasize the role of positive psychological capital as an important factor for predicting different types of employee behavior and attitudes in the workplace (Luthans and Youssef 2007; Avey et al. 2011). Building on this literature, we conducted survey-based research to explore how the three components of positive psychological capital—including hopeful thinking, optimism, and resilience—predicted employees’ environmentally responsible behaviors in the workplace. Employees with a higher level of positive psychological capital usually expect the occurrence of good things (optimism). They also feel confident that their personal ability will result in successful results (hope) and are more resilient when facing unexpected situations (resilience) (Avey et al. 2011).

There is a rich literature that emphasizes the importance of organizational justice as the drivers of employees’ engagement in voluntary and unrewarded behavior at work (Rupp et al. 2006; Robertson and Barling 2013; Šimunović et al. 2018; Shao et al. 2019). Feeling like they receive fair treatment in the workplace (justice) encourages employees to engage in those duties which do not adhere to their formal role obligations (Cohen and Avrahami 2006). Some empirical evidence emphasizes that the concern for the collective interest (e.g., environmentally responsible behavior) is higher when people evaluate their social situation as a fair situation (van Prooijen 2013). Furthermore, perceived justice promotes cooperation in social dilemmas (Tyler and Degoey 1995; Kals 1996). Building on this literature, we predicted and tested that the employees with positive psychological capital engage more in various types of environmentally responsible behaviors at the workplace when they have a higher level of environmental justice perception.

Our research contributes to the sustainability literature by identifying those employees who engage more in environmentally responsible behavior at work. For the first time, we found that employees with positive psychological capital exhibit more environmentally friendly behavior at work. Most importantly, our study highlighted the importance of environmental justice perception for explaining the relationship between positive psychological capital and employees’ environmentally responsible behavior at work. We found that employees with a high level of hopeful thinking and resilience are more likely to engage in environmentally responsible behaviors at work when overall justice perception is high.

**Literature review and hypotheses development**

**Positive psychological capital**

Positive psychological capital is a multidimensional construct and includes optimism, hope, and resilience (Law, Wong, and Mobley 1998; Avey et al. 2011). According to Luthans et al. (2006) and Luthans and Youssef (2007), positive psychological capital reflects the positive psychological state of development that can be characterized by:

1. having confidence (self-efficacy) to put the necessary effort to succeed at challenging tasks;
2. making a positive attribution (optimism) about succeeding now and in the future;
3. persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and
4. when beset by problems and adversity, sustaining and bouncing back, and even beyond (resilience) to attain success.

Organizations can benefit in several ways from employees who are highly optimistic, hopeful, and resilient. These types of employees have a positive tendency toward organizational goals (Newman et al. 2014), and they are highly creative and innovative when doing things in the workplace (Sweetman et al. 2011). Most importantly, the employees’ high level of positive psychological capital is related to a higher level of job performance (Madrid et al. 2018).

**Overall justice perception or judgments**

The majority of research studies on organizational behavior and psychology have considered three distinct types for justice including distributive justice (perceptions of fairness in the outcomes within the organization), procedural justice (perceptions of fairness in the process within the organization), and interactional justice (perceptions of fairness in the treatment of individuals within the organization) (Skarlicki and Folger 1997). Recently, a number of scholars have suggested that considering overall fairness judgments may provide a more in-depth and comprehensive understanding of justice in the organizational environment (Ambrose, Hess, and Ganesan 2007; Ambrose and Schminke 2009; Holtz and Harold 2009). The overall (environmental)
Justice perception or judgments refer to the employees’ overall perceptions about how they are treated fairly within their organization and the business environment (Ambrose and Schminke 2009). Employee’s sense of justice is an important factor for strengthening their organizational commitment (Loi, Hang-Yue, and Foley 2006). A higher level of perceived justice facilitates the strategic changes within organizations (Soenen and Melkonian 2017), improves employees’ job performance (Colquitt et al. 2012), and reduces their intention to leave (Loi, Hang-Yue, and Foley 2006; Gharleghi, Jahanshahi, and Nawaser 2018). A higher level of perceived justice within a business environment can result in many positive psychological benefits, such as helping others (Ehrhart 2004), trusting each other more (DeConinck 2010), engaging in voluntary behaviors (Shao et al. 2019), committing to changes (Soenen and Melkonian 2017), and coping with stress in healthier ways (Dalbert 1998; Dalbert et al. 2001). In this regard, Simunović et al. (2018) considered justice as an important factor for shaping sustainability-oriented behaviors at work as well.

**Employees’ environmentally responsible behaviors**

Many firms around the world began to improve their environmental performance by encouraging their staff members to participate more actively in voluntary pro-environmental behaviors (Robertson and Barling 2015). This interest in the workplace—pro-environmental behavior—is becoming a focus for research and a growing body of work seeking to understand the likely antecedents and consequences of these types of behaviors at the workplace has emerged. In this regard, Tian and Robertson (2019), in their study on employees’ voluntary pro-environmental behavior, demonstrated that the scholarly activities around this topic are rising very quickly. They mainly focused on the predictors of workplace pro-environmental behavior, especially the effects of perceived corporate social responsibility on employees’ voluntary pro-environmental behavior. They used data from 183 employees at large- and medium-sized hotels and casinos in Guangdong (China) and Macau. The empirical results of their study show that employees’ corporate social responsibility (CSR) indirectly affects their engagement in pro-environmental behavior. This occurs via organizational identification and mostly among employees with higher empathy.

Solutions for current environmental issues depend on the alternation of human behavior more than the traditional technological approach since the ecological crisis is due to maladaptive behavior. In this regard, these behaviors should be explored, and in addition, how people feel and what they know about the importance of the environment and its crisis should be determined (Borden and Schettino 1979). Environmentally responsible behaviors refer to the voluntary and discretionary behaviors of individuals toward the environment (Boiral and Paillé 2012; Paillé et al. 2014; Lamm, Tosti-Kharas, and King 2015; Schäpke and Rauschmayer 2014; Tosti-Kharas, Lamm, and Thomas 2017). In the workplace, environmentally responsible behaviors describe the voluntary activities and behaviors that go beyond the employees’ job description, which have a substantial impact on the improvement of the work environment (Organ 1988). In other words, environmentally responsible behaviors show the employees’ engagement in voluntary and unrewarded environmental initiatives that are not defined as the mandatory duties included in their job descriptions (Daily, Bishop, and Govindarajulu 2009; Paillé and Boiral 2013).

Employees’ environmentally responsible behaviors are helpful for improving organizational environmental performance and for preserving the natural environment as well (Robertson and Barling 2013, 2017). In this regard, Cheng and Wu (2015) believe that some basic environmental knowledge and environmental sensitivity are required for enhancing the engagement of employees in environmentally responsible behaviors. In the context of Bangladesh, Moktadir et al. (2019) have found that “green organizational culture,” “green selection facility,” “green recruiting facility,” “green purchasing,” and “top management commitment towards greening the workforce” are the major antecedents to environmentally responsible behaviors at the workplace. In another study in this context, Suhi et al. (2019) highlighted the important role of “waste management” for improving environmental sustainability.

**Positive psychological capital and environmentally responsible behavior**

Which types of employees engage more in environmentally responsible behavior in the workplace? Researchers have tried to find an answer to this question by considering different personal, environmental, and organizational factors (Kim et al. 2017). According to Corral-Verdugo (2012), environmentally responsible behavior is the positive behavior in the workplace caused by positive dispositional factors. Therefore, in this research, we predicted that people with positive psychological capital are more likely to engage in environmentally responsible behavior at work. Positive psychological capital includes several positive emotions, like resilience, hope, and optimism, and these positive emotions...
may lead to positive types of behaviors inside and outside of the work environment (Zachrisson and Boks 2012). Individuals with positive psychological capital are characterized by three main features. First, they are highly optimistic and mostly looking forward to having favorable events in their lives. An optimistic person believes that his/her behavior will generate desirable outcomes for him/herself, and for the people around them (Karademas 2006). Supporting our arguments, Sharrock et al. (1990) found that optimistic people show more helping behavior (a kind of voluntary behavior intended to help other people). Second, hopeful thinking is another characteristic of individuals with positive psychological capital (Avey, Weaver, and Luthans 2008). Individuals with hopeful thinking are more likely to look forward to an equal, more fair, and just society than people who have constant feelings of hopelessness (Collins 2015). A hopeful individual feels more happiness and satisfaction in his/her life and work, which can act as the motivator for engaging in environmentally responsible behaviors (Bechtel et al. 2006; Corral-Verdugo 2012). Alternatively, lack of hopefulness can reduce individual engagement in environmentally friendly behaviors because such characteristics hurt personal motivation and confidence when facing daily environmental challenges (Copic et al. 2011). Third, based on the literature pertaining to social workers, resilience is another important factor to engage in voluntary behaviors that can help other people, in addition to being optimistic toward the future and having hope (Collins 2007). Resilient people are less afraid to face different challenges and stressful situations in their life and in the workplace. They are usually looking for desirable life outcomes and trying to make the world a better place (Cohn et al. 2009). In this regard, Jung and Yoon (2015) found resilient individuals are more likely to contribute to voluntary behaviors in the workplace. Facing stressors, difficulties, and pressures, they continue positive engagement to practices in the workplace (Reich, Zautra, and Hall 2010). This can highlight the significance of resilience in maintaining employee engagement to environmental sustainability practices without interruption during stressors.

Individuals with positive psychological capital are more likely to go beyond their regular tasks in the workplace and engage in voluntary, environmentally orientated behaviors. In general, they are apt to be highly active in the workplace. More importantly, they have a more positive attitude toward the future (Pradhan, Jena, and Bhattacharya 2016). To make the future a better place for everyone, they exhibit more extra-role behaviors toward their colleagues in the workplace (Pradhan, Jena, and Bhattacharya 2016). They are highly goal-oriented and usually establish several alternatives for achieving their goals (Green, Oades, and Grant 2006). Individuals with positive psychological capital feel more happiness, satisfaction, and have a positive view of the future. Indeed a level of optimism toward the future is needed for engaging in voluntary and unpaid activities in the workplace. Therefore, individuals with positive psychological capital may engage more in environmentally responsible behaviors to make the world (and workplace) a better place for themselves and the next generation.

Hypothesis 1a: Employees’ optimism is positively related to their environmentally responsible behaviors in the workplace.

Hypothesis 1b: Employees’ hope is positively related to their environmentally responsible behaviors in the workplace.

Hypothesis 1c: Employees’ resilience is positively related to their environmentally responsible behaviors in the workplace

The moderating role of environmental justice perception

Different factors influence and shape employees’ environmentally responsible behavior in the workplace, and there is no single factor that can explain this complex phenomenon (Kollmuss and Agyeman 2002). According to Simunović et al. (2018) perceived sense of justice and fairness is an as important factor for shaping sustainability-oriented behaviors at work. Moorman (1991) believes that an employee’s voluntary commitment within an organization is higher when the perception of justice is high at the workplace. In this study, we predicted that the environmentally responsible behavior of employees is the result of the joint effect of individual (positive psychological capital) and work environment level factors (environmental justice perception). In other words, individuals with positive psychological capital are more likely to engage in environmentally responsible behavior if they are treated fairly in their organization. Feeling a fair treatment in the workplace can enrich people’s positive attitudes toward their colleagues and business environment. In short, justice is about fairness perception. If an employee with positive psychological capital is treated fairly and well in the workplace, in turn, he/she will be more likely to reciprocate this fairness by performing in ways that benefit other people in the organization or even in the society.
Therefore, as presented in Figure 1, we hypothesize that

Hypothesis 2a: the perception of environmental justice moderates the relationship between optimism and environmentally responsible behavior.

Hypothesis 2b: the perception of environmental justice moderates the relationship between hopeful thinking and environmentally responsible behavior.

Hypothesis 2c: the perception of environmental justice moderates the relationship between resilience and environmentally responsible behavior.

**Methods**

**Procedures**

In this research, we targeted employees who are working in small-sized businesses in the service industry. A paper-based survey was used for collecting data from Bangladeshi employees. In total, 50 service companies were selected from a list of small-sized firms that were members of the Chamber of Commerce in Narsingdi—a district in central Bangladesh. In the first step, one of the local data collectors met the human resource managers, CEOs, or founders of these target companies and asked for approval of the study. The relevant authorities of 35 out of 50 small-sized service businesses allowed us to launch our survey among their employees. A cover letter was attached to each survey to explain briefly the main objectives of the study and promised participants that their answers were completely confidential. The original survey was translated into the local language using the back-translation method (Brislin 1970; Jahanshahi and Jia 2018). In doing so, the English version of the survey was translated into Bengali by a language expert, then the Bengali version of the survey converted to English by another language expert. We compared these two versions to ensure survey consistency and accuracy. Before launching the survey, we asked five employees to read the survey aloud and let us know if any sentence or word did not make sense. Minor changes resulted from the pretest indicating participants were able to understand clearly the survey items. These five people were then dropped from the final sample. We have used a two-week interval between the first survey (including control, independent variables, and moderator) and the second survey (including dependent variable). Furthermore, we informed respondents about the voluntary nature of participation in the study and that they could opt out of participation at any time. At the beginning of the survey, we asked the participants to provide us with demographic information. We also requested that they return the completed survey to a member of the data-collection team within a week.

**Statistical methods**

We used SPSS to estimate the hypotheses. In doing so, all usable questionnaires in the sample were coded and imported into the SPSS software (Version 20). We compared early respondents (first 25%) with late respondents (last 25%) using control variables in the sample to make sure our results did not suffer from non-response bias. We did not find any significant difference between early respondents and late respondents. Furthermore, we checked the normality of data on core variables. Both Kolmogorov–Smirnov and Shapiro–Wilk tests verified the normal distribution of our data. We ran exploratory factor analyses (EFA) to assess the factor structures of measurement items; the reliability of the measurement items was assessed using Cronbach’s alpha and we checked variance-inflation.
factors (VIF) to investigate about multicollinearity issues.

We used Pearson Correlation Coefficients to check the linear correlation among the core variables of the study. The Hierarchical Regression Analysis was used for testing the first set of hypotheses, which predicted a direct impact of employees’ optimism, hope, and resilience on their environmentally responsible behavior in the workplace. In the first step, we tested the effects of control variables on employees’ environmentally responsible behavior and in the second step assessed the effects of all control variables and three dimensions of positive psychological capital on employees’ environmentally responsible behavior as dependent variables. We have used the same producers for testing the second set of hypotheses, which predicted the moderating role of perceived environmental justice on the relationship between optimism, hope, and resilience with employees’ environmentally responsible behavior at the workplace.

**Context of the study**

Employees working in private-owned service businesses received our survey in Bangladesh. According to the Ministry of Industry and Bangladesh Bank (BB), companies with fewer than 25 employees are categorized as small businesses. Excluding the CEOs and founders, we randomly selected 7–8 full-time employees from each company. In total, 261 employees in 35 private companies received our first survey (including independent variables, the moderating variable, and control variables). We received 206 usable responses in Time 1, and 196 employees provided complete responses in Time 2 (dependent variable), yielding a response rate of 75%. The majority of Bengali employees were men 63.3%. The average age of respondents was 38.8 years old, and they had an average of 11.8 years of working experience. In terms of educational qualification, 20.4% of survey sample had a high school diploma, 31.1% had attended college, 19.4% had a bachelor’s degree, 21.9% had attended graduate school, and 7.1% held Master’s and higher degrees. In terms of monthly income, 27.6% of survey sample earned from 10,000 to 30,000 Bangladeshi taka (BDT), 50.0% earned from 30,001 to 60,000 BDT, 13.8% earned from 60,001 to 90,000 BDT, and only 8.7% earned more than 90,000 (84 BDT equal to 1 USD).

**Measurement**

- **Optimism**: In this study, employees’ optimism was measured based on the five items stated by Scheier, Carver, and Bridges (1994). The response options for these five items ranged from 1) “strongly disagree” to 5) “strongly agree,” and higher scores represent a higher level of optimism. The Cronbach’s alpha value (α) for the employees’ optimism was 0.79.
- **Hopeful thinking**: Hopeful thinking refers to the individual’s current beliefs about how successful one is when pursuing current goals, and how confident one is when finding ways to attain these current goals (Snyder et al. 1996; Rego et al. 2009). We used six items from Snyder et al. (1996) to measure the employees’ hopeful thinking on an eight-point Likert scale ranging from 1 = definitely false to 8 = definitely true. The Cronbach’s alpha value (α) for the employees’ hopeful thinking was 0.85.
- **Resilience**: Fourteen items were used from Block and Kremen (1996) for measuring employees’ resilience. We asked the respondents to indicate the extent to which these fourteen statements apply to them on a four-point Likert scale ranging from (1) does not apply at all to (4) applies very strongly. The Cronbach’s alpha value (α) for the employees’ resilience was 0.85.
- **Environmental justice perception**: Employees’ environmental justice perceptions or judgments were measured based on the six items from Ambrose and Schminke (2009). The response options for these items ranged from (1) “strongly disagree” to (7) “strongly agree,” and higher scores represent a higher level of perception of justice. The Cronbach’s alpha value (α) for the employees’ justice perception was 0.901.
- **Employees environmentally responsible behaviors**: Employees’ environmentally responsible behaviors were measured based on the seven items adapted from Temminck, Mearns, and Fruhen (2015). All the answers were captured on a 5-point scale ranging from (1), not at all to (5) to a great extent. The Cronbach’s alpha value (α) for the sustainable behavior of employees in the workplace was 0.89. Appendix Table A1 provides the wording items for the core-study variables.
- **Control variables**: Following similar studies (Temminck, Mearns, and Fruhen 2015; Afshar Jahanshahi and Brem 2018), we have used several relevant demographic characteristics of the respondents as control variables. In this study, we controlled the respondents’ age (How old are you?), educational level (on five categories), gender (male vs. female), working experience or organizational tenure (total number of years a respondent is working for his/her current organization), and monthly income.
Results

The descriptive statistics and Pearson Correlation Coefficients among the core study variables are shown in Table 1. As displayed in the table, there is a positive correlation between independent variables [optimism (0.352**), hope (0.487**) and resilience (0.519**)] and the dependent variable [environmentally responsible behaviors (0.327**)]. Furthermore, perceived justice is a moderation variable positively correlated with the independent variables [optimism (0.224**), hope (0.260**) and resilience (0.388**)].

In order to identify the underlying association among the core variables, we ran Exploratory Factor Analysis (EFA). The factor loadings for each of the items, Kaiser–Meyer–Olkin (KMO) and Bartlett’s Test are included in Appendix Table A2. Accordingly, an EFA yield to the KMO measure of sampling adequacy of 0.803, and Bartlett’s Test of Sphericity revealed a significant chi-square of 2,978,691 ($p < 0.001$). A maximum likelihood with Varimax rotation was conducted. As we expected, a five-factor with separate solutions was loaded and these five factors represented hopeful thinking, optimism, resilience, justice, and environmentally responsible behaviors in the workplace. The first factor explains only 12.2% of the total variance in the sample data. All three independent and moderator variables were mean-centered before checking for variance inflation factors (VIF). As seen in Tables 1 and 2, all VIF values were below Table 2, which confirmed that multicollinearity did not threaten our findings (O’Brien 2007).

We have used Hierarchical Regression Analysis for testing the first set of hypotheses, which predicted a direct impact of employees’ optimism, hope, and resilience on their environmentally responsible behavior in the workplace. In doing so, we first entered only control variables and employees’ environmentally responsible behavior as dependent variables. Among the control variables, as shown in Table 2, Model 1, highly educated employees in the sample ($B = 0.184$, $p < 0.001$) engage more in sustainable behaviors in the workplace. In addition, employees with more work experience ($B = 0.026$, $p < 0.001$) engage more in sustainable behaviors in the workplace.

We ran four regression analyses to test the direct effect of three components of positive psychological capital on employees’ environmentally responsible behavior. As seen in Table 2 (Models 1–3), we first tested the direct effect of optimism, hopeful thinking, and resilience on the dependent variable independently. In the last step, we entered the control variables, as well as optimism, hopeful thinking, and resilience, as independent variables simultaneously. We received the same relationship pattern between the three components of positive psychological capital and environmentally responsible behavior in both methods. As shown in Table 2, Model 4, optimistic ($B = 0.232$, $p < 0.001$), hopeful thinking ($B = 0.083$, $p < 0.05$), and resilience employees ($B = 0.281$, $p < 0.01$) engage more in environmentally responsible behaviors in the workplace. Therefore, this finding supports our 1a, 1b, and 1c hypotheses.

We followed the same procedures for testing the moderation role of environmental justice perception or judgments on the relationship between the three components of positive psychological capital on employees’ environmentally responsible behavior. As shown in Table 3, Model 4, the moderating role of environmental justice perception or judgments on the relationship between employees’ optimism and
their sustainable behaviors (H2a) was not supported. As shown in Figure 2, and Table 3, Model 5, environmental justice perception or judgments moderate the relationship between employees’ hopeful thinking \((B = 0.092, p < 0.001)\) and their sustainable behaviors (H2b). We find support for the moderating role of environmental justice perception or judgments on the relationship between employees’ resilience \((B = 0.191, p < 0.01)\) and their sustainable behaviors (H2c), as shown in Figure 3, and Table 3, Model 4. Thus, we find empirical support for 2b and 2c hypotheses, but not for 2a.

**Discussion and conclusion**

We conducted a study in the context of South Asia to investigate whether people with positive psychological capital engage more in environmentally responsible behaviors in the workplace. In doing so, we examined the direct effects of three components of positive psychological capital—including hopeful thinking, optimism, and resilience—on environmentally responsible behaviors at work by using survey data from employees in Bangladesh. Furthermore, we tested the moderating role of environmental justice perception or judgments on these relationships as well. We found a statistically significant relationship between the three components of positive psychological capital (hopeful thinking, optimism, and resilience) and the employees’ environmentally responsible behaviors in the workplace.

More specifically, we found that optimistic employees engage more in environmentally responsible behaviors at work. Previous studies showed that optimistic individuals always expected the occurrence of positive outcomes for their actions (Scheier, Carver, and Bridges 2001). As sustainability-oriented behaviors generate positive outcomes in the workplace and the whole society in long-term, optimistic employees feel more commitment and engagement to adopt such voluntary behaviors toward the environment within organizations.

We also found that employees with hopeful thinking engage more in environmentally responsible behaviors in the workplace. Hopeful thinking is an important factor for setting goals (Lueck 2007) and enhancing confidence to face obstacles in daily

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**Table 3.** Results of hierarchical moderated regression analyses (dependent variable: employees’ environmentally responsible behavior or sustainable behavior).

|          | M1          | M2          | M3          | M4          | VIF  |
|----------|-------------|-------------|-------------|-------------|------|
| 1. Age   | -0.011      | -0.007      | -0.008      | -0.009      | 1.696|
| 2. Gender| -0.076      | -0.175      | -0.098      | -0.131      | 1.080|
| 3. Education | 0.141***    | 0.114*      | 0.142***    | 0.106***    | 1.167|
| 4. Tenure | 0.013       | 0.013       | 0.012       | 0.005       | 1.787|
| 5. Income | 0.046       | -0.093      | -0.015      | 0.032       | 1.276|
| 6. Optimism | 0.335*      | 0.358***    | -0.209      | 0.256**     | 1.437|
| 7. Hope |             |             | -0.037**    | -0.092***    | 1.198|
| 8. Resilience | 0.149       | 0.340***    | -0.0329     | 0.132       | 1.116|
| 9. Justice | -0.023      | 0.147*      | -0.035**    | 1.098       |
| 10. Optimism × Justice | 0.251       | 0.393       | 0.256       | 0.385       |
| 11. Resilience × Justice | 0.219       | 0.363       | 0.224       | 0.345       |
| \(R^2\)  | 7.838***    | 16.352***   | 8.054***    | 9.541***    |
| Adj. \(R^2\) | 0.4288      | 0.2362      | 0.3452      | 0.4252      |
| \(F\)   | 7.838***    | 16.352***   | 8.054***    | 9.541***    |

Sample size \(N = 196\) for all models.

*p < 0.05, **p < 0.01, ***p < 0.001; †p < 0.10.*

Coefficient estimates (in bold) shows the significant interaction effect of independent variables/moderation variables on dependent variable.
life in order to achieve desired goals (Avey et al. 2011). There is empirical evidence—consistent with our results—that highlighted the importance of hopeful thinking in the engagement of environmentally oriented behavior to have a better future (Lueck 2007). Hopeful thinking is vital for creating positive environmental changes. Hopeful thinking may lead to voluntary behaviors toward the environment, particularly when employees feel concerned or worry regarding environmental issues. Supporting our findings (Quimby and Angelique 2011) found that hopelessness is a major barrier for engaging in pro-environmental behaviors in the workplace.

Furthermore, our survey-based data supported the positive effect of resilience on engagement in environmentally responsible behaviors in the workplace. Previous studies have shown that resilience enables individuals to sustain their meaningful goal-oriented and pleasure-oriented activities (Zautra, Arewasikporn, and Davis 2010). It seems that resilient employees feel more enthusiastic about adopting voluntary and unrewarded behaviors toward the environment; this may, because of getting involved in environmental sustainability actions, provide them with a greater sense of fulfillment as well as pleasure (Corral-Verdugo 2012). Thereby, the resilient employees held positive-oriented characteristics and points of view that encourage them to exhibit more voluntary pro-environmental behaviors (Luthans et al. 2006; Avey, Luthans, and Youssef 2010). In this line of research, some scholars have contended that resilient employees have a more positive attitude and emotions toward the self, organization, and future (Luthans et al. 2006; Mo et al. 2014). Therefore, they are more likely to be involved in positive behaviors in the workplace, such as environmentally responsible behaviors, which can create value for them, their organization, and the society.

The key contribution of this study is to show the contingency role of environmental justice perception or judgments on the relationship between two components of positive psychological capital including hopeful thinking, resilience, and environmentally responsible behaviors in the workplace. For the first time, our results explored that the employees who have strong, hopeful thinking and environmental justice perception or judgments are more likely to engage in environmentally responsible behaviors. Furthermore, we found that the employees who have a high level of both resilience and environmental justice judgments show a higher level of engagement in environmentally responsible behaviors in the workplace.

In summary, our findings in this study have shown that positive psychological capital could be a stimulating factor for explaining employees’ sustainability-oriented behaviors at work. This empirical evidence for employees in South Asia contributes to the current literature by identifying the employees who focus beyond themselves in the workplace and are more concerned about the whole community. Also, this study found that environmental justice perception can act as a moderator between two components of positive psychological capital, namely hopeful thinking and resilience, and environmentally responsible behaviors.

Environmental preservation and sustainability have been a crucial concern for policy makers, business managers, and scholars in recent years. There is a growing body of research surrounding how environmental sustainability can be more efficiently embedded in different industries, business sectors, and even people’s daily life. This highlights the importance of recruiting and maintaining sustainability-oriented people in organizations as they can be effective in expanding environmental sustainability behaviors in different sectors within societies. Indeed, individuals are the main actors in developing green activities (Lülf and Hahn 2013). A person with a sustainability orientation prioritizes environmental issues in their personal and professional life. They may contribute more to environmental preservation initiatives such as recycling, pollution reduction, and energy-consumption reduction. Organizations can meet their environmental sustainability policies more efficiently when they benefit from having sustainability-oriented people. They can moreover act as role models to stimulate others to pursue sustainability-oriented behaviors.

Additionally, this study can offer significant insight for industrial’s managers. Previous studies have found that positive psychological capital is a more state-like element than personality traits; it is more open to being enhanced and managed (Luthans, James, and Jaime 2008). In this regard, including criteria based on the positive psychological capital construct in recruitment and selection processes, and then providing human resources-management policies and practices to further develop employees’ positive psychological capital, can be desirable particularly for those firms operating in industries with serious environmental problems (e.g., chemicals, oil, and gas).

Clean and modern technologies of production can help businesses to reduce emissions and wastes. However, in many developing and less developed countries, small and medium-sized companies suffer from access to this equipment. This challenge makes it difficult to have a green and environmentally
Employees play a central role in a company’s green mission. Our results have highlighted the importance of environmental justice in enhancing the employees’ engagement in environmental sustainability behaviors at the workplace. Therefore, treating the employees fairly at work can be one of the ways in which the managers of companies can encourage voluntary pro-environmental behaviors. Employees’ engagement in these types of behaviors can contribute positively to the company’s environmental performance and improve the overall quality of life in the surrounding society.

There are some limitations in our research that provide relevant avenues for future research. First, we have tested our arguments by using cross-sectional data; a longitudinal research design can improve our understanding of these relationships and provide potentially robust results. For better understanding of the employees’ behavior at work, according to social cognitive theory (Wood and Bandura 1989), it is necessary to consider the joint effect of both personal and environmental factors. In doing so, we predicted that environmentally responsible behavior of employees is the result of the joint effect of individual (positive psychological capital) and environmental factors (environmental justice perception). However, environmental justice perception is still the individual’s perception and not an “environmental factor.” We encourage future researchers to use environmental factors as the contingent factor for explaining the relationship between positive psychological capital and employees’ environmentally responsible behavior. Furthermore, we relied on single informants to measure all the variables of the study, which can increase the potential of common source bias. Future research could ask supervisors or managers to assess employees’ engagement in environmentally responsible behaviors in the workplace. Finally, some researchers have considered four dimensions for positive psychological capital (hope, optimism, resilience, and self-efficacy). In this study, the reliability of the self-efficacy scale was below conventional standards, and it did not reach acceptable levels of internal consistency (using Chronbach’s alpha). Therefore, we could not test the impact of employees’ self-efficacy on their environmentally responsible behavior.

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## Appendix

**Table A1.**

| Items                                                                 | Factor loading |
|-----------------------------------------------------------------------|----------------|
| **Employees sustainable behavior**                                    |                |
| 1. I make environmental suggestions to improve work procedures       | 0.575          |
| 2. I make suggestions to improve the organization's environmental performance | 0.578          |
| 3. I try to draw management's attention to potentially environment unfriendly activities | 0.711          |
| 4. I try to make innovative environmental suggestions to improve the organization | 0.732          |
| 5. I inform management of potentially environmentally irresponsible policies and practices | 0.815          |
| 6. I am willing to speak up when policy or rules do not contribute to the achievement of the organization's environmental goals | 0.725          |
| 7. I suggest revisions to work practices to achieve the organization's environmental objectives | 0.766          |
| **Optimism**                                                          |                |
| 1. In uncertain times, I usually expect the best                      | 0.649          |
| 2. If something can go wrong for me, it will                          | 0.653          |
| 3. I usually feel good when thinking about my future                 | 0.552          |
| 4. I hardly ever expect things to go my way                           | 0.748          |
| 5. I rarely count on good things happening to me                       | 0.710          |
| **Hopeful thinking**                                                  |                |
| 1. If I should find myself in a jam, I could think of many ways to get out of it | 0.652          |
| 2. At the present time, I am energetically pursuing my goals          | 0.620          |
| 3. There are lots of ways around any problem that I am facing now     | 0.775          |
| 4. Right now, I see myself as being pretty successful                  | 0.612          |
| 5. I can think of many ways to reach my current goals                 | 0.793          |
| 6. At this time, I am meeting the goals that I have set for myself     | 0.616          |
| **Resilience**                                                        |                |
| 1. I am generous with my friends                                      | 0.457          |
| 2. I quickly get over and recover from being startled                 | 0.412          |
| 3. I enjoy dealing with new and unusual situations                    | 0.541          |
| 4. I usually succeed in making a favorable impression on people       | 0.492          |
| 5. I enjoy trying new foods I have never tasted before                 | 0.373          |
| 6. I am regarded as a very energetic person                           | 0.582          |
| 7. I like to take different paths to familiar places                  | 0.622          |
| 8. I am more curious than most people                                 | 0.763          |
| 9. Most of the people I meet are likable                              | 0.492          |
| 10. I usually think carefully about something before acting           | 0.353          |
| 11. I like to do new and different things                              | 0.742          |
| 12. My daily life is full of things that keep me interested            | 0.740          |
| 13. I would be willing to describe myself as a pretty “strong” personality | 0.567          |
| 14. I get over my anger at someone reasonably quickly                 | 0.406          |
| **Environmental justice perception** (Ambrose and Schminke 2009)       |                |
| 1. Overall, I’m treated fairly by my organization                     | 0.778          |
| 2. Usually, the way things work in this organization is not fair. (Reversed code) | 0.823          |
| 3. In general, I can count on this organization to be fair            | 0.880          |
| 4. In general, the treatment I receive around here is fair            | 0.855          |
| 5. For the most part, this organization treats its employees fairly   | 0.817          |
| 6. Most of the people who work here would say they are often treated unfairly. (Reversed code) | 0.790          |

**Table A2.**

| KMO and Bartlett's Test |               |
|-------------------------|---------------|
| KMO–Meyer–Olkin Measure of Sampling Adequacy. | 0.803 |
| Bartlett’s Test of Sphericity |               |
| Approx. Chi-Square | 2978.691 |
| df             | 703          |
| Sig.           | 0.000        |