Sustainable employee green behavior in the workplace: Integrating cognitive and non-cognitive factors in corporate environmental policy

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Abstract

Sustaining employee green behavior (EGB) in the workplace requires an inclusive understanding of the factors that induce it. This study aims to bridge the gap of scarce research on task-related EGB by integrating both cognitive and non-cognitive factors as an extension to the Theory of Planned Behavior. Task-related EGB refers to employees pro-environmental behaviours performed as part of routine tasks and roles. Using principal component analysis and structural equation modeling, the survey findings from 302 employee participants reveal that both cognitive and non-cognitive factors significantly influence the task-related EGB. In addition to this theoretical contribution, this study's findings suggest that creating positive environmental attitudes and habits via pro-environmental policies, procedures, and practices in the workplace can enhance employees' task-related EGB. The provision of access to information, training, and other resources regarding pro-environmental behavior in the workplace may also have an impact. Besides, the results validate the under-explored mediating role of environmental attitudes and pro-environmental habits between individual-level predictors and task-related EGB in the workplace. Lastly, this study's findings offer potential directions for further research in relation to EGB in the workplace.

KEYWORDS: employee motivations; environmental policy; green work climate; pro-environmental habits; sustainable behavior; Theory of Planned Behavior

1. INTRODUCTION

Environmental sustainability has become a key component in many organizations' corporate strategies to promote and sustain green behavior in the workplace. Many integrate sustainability dimensions in their business modeling to foster a competitive advantage (Gürlek & Tuna, 2018; Zameer, Wang, & Yasmeen, 2020), including in relation to green accounting, green banking, green marketing, and green supply chain management. Green human resource management (GHRM) is a relatively new entrant in the workplace environmental sustainability domain (Chaudhary, 2020; Davis, Unsworth, Russell, & Galvan, 2020), with a growing body of literature focused on environmental workplace behaviors, particularly an employee's actions to help protect the natural environment (Ciocirlan, 2017). Such actions are broadly referred to as green or pro-environmental behavior (PEB): "behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world (e.g., minimize resource and energy consumption, use of non-toxic substances, reduce waste production)" (Kollmuss & Agyeman, 2002, p. 240).

Relevant green behaviors are often viewed as context-specific, in that most individuals demonstrate different green behaviors based on whether they are at home, making buying decisions, or using transport (Lynn, 2014; Steg & Vlek, 2009). In this study, green behavior in the workplace has been determined as employee green behavior (EGB), which has previously been categorized into two main types: task-related green behavior and voluntary green behavior (Norton, Parker, Zacher, & Ashkanasy, 2015). While the former is mostly performed within the context of work-related tasks, the latter relates more to individual initiatives that go beyond the assigned task (Norton et al., 2015).

Task-related EGB is otherwise recognized as environmental in-role behaviors involving the performance of pro-environmental behaviors by employees in relation to their job specifications, or actions they initiate in the normal course of undertaking their routine task roles (Bissing-Olson, Iyer, Fielding, & Zacher, 2013). For example, an accountant may edit reports electronically rather than printing those out, or print drafts on scrap papers. In contrast, voluntary green behavior, also known as proactive or extra-role EGB, moves outside such formal task roles and represents a change-oriented and self-starting approach relating to sustainable development and resource conservation issues in the workplace (Bissing-Olson et al., 2013). For example, an employee may motivate his/her colleagues to turn off their laptops or personal computers before

leaving their desk or switch off electric fan or lights before leaving the room. In sum, both in-role and extra-role EGBs are at employees' discretion to act in environmentally-friendly ways in the workplace. However, the specific distinction between these two concepts lies in the context (routine task roles or not) wherein behavior takes place (Bissing-Olson et al., 2013).

While research on EGB has been growing, most former studies have only focused on voluntary EGB (Norton et al., 2015), such as employee-driven eco-innovation (Buhl, Blazejewski, & Dittmer, 2016), citizenship behavior for the environment (Erdogan, Bauer, & Taylor, 2015), and eco-helping behavior (Paillé, Mejía-Morelos, Marché-Paillé, Chen, & Chen, 2016). Task-related EGB has been identified being scarce in the existing literature (Acar & Yalçın, 2019; Salvador & Burciaga, 2020). Understanding task-related EGB has been determined as critical to an organization's environmental sustainability, which is often guided by employees' perceptions of the green work climate (organization's environmental sustainability policies, procedures, and practices) (Norton, Zacher, & Ashkanasy, 2014). The routine nature of task-related EGB is also more likely to enhance organizational environmental sustainability performance (Salvador & Burciaga, 2020).

Some recent studies on task-related EGB have investigated the impact of organizational internal environmental orientation (e.g., Salvador & Burciaga, 2020) or GHRM practices (e.g. Chaudhary, 2020) on EGB, such as recycling and energy-saving behavior. In this context, some notable research areas are yet to be explored. First, extant studies mostly represent the essential interplay between organization's pro-environmental efforts and employee-level factors as drivers of individual employee-level pro-environmental behaviors (e.g., task-related EGB) (Ciocirlan, 2017). Nonetheless, evidence of how exclusively employee-level factors might play role in the absence of organizational-level pro-environmental initiatives is inconclusive in the existing literature. Indeed, employees are the predominant force who play the most crucial role in the success of organizational pro-environmental initiatives (Baranova & Meadows, 2017; Zientara & Zamojska, 2018). Organizational policies and procedures, be they pro-environmental or not, are eventually implemented by the employees, making them a significant contributor to overall organizational performance. In most cases, employees are incapable of going beyond their routine tasks; hence, task-related EGB primarily constitutes the overall EGB (Zientara & Zamojska, 2018). However, while past studies mostly indicate that EGB generates from

employee-level factors, challenges remain with comprehensive understanding of such factors (Norton et al., 2015).

Second, the main theory used in understanding EGB is the Theory of Planned Behavior (TPB) (Ajzen, 1991), which has been recognized as invaluable in examining green behavior in the workplace (Blok, Wesselink, Studynka, & Kemp, 2015; Wesselink, Blok, & Ringersma, 2017). However, the TPB consists of cognitive and rational predictors that primarily assume that individuals typically make rational choices (Demarque, Charalambides, Hilton, & Waroquier, 2015), while some pro-environmental behaviors could not be explained only by individual's rationality (Kals, Schumacher, & Montada, 1999). Accordingly, a core criticism of this theory is that it underplays the input of non-cognitive determinants of behavior, particularly habits and emotions (Klöckner, 2013; Russell & Fielding, 2010). Norton et al. (2015) also suggested several cognitive and non-cognitive determinants including job factors (e.g., work environment), internal motivations, and environmental knowledge and awareness that have not received adequate research attention in understanding EGB. It is thus posited in this study that integrating both cognitive and non-cognitive factors to the TPB would enhance our understanding of EGB in workplace settings.

Third, within the broad scope of EGB literature, several studies reported organizational-level factors (e.g., green psychological climate) as mediator between organizational-level predictors (e.g., GHRM, sustainability policy) and EGB (e.g. Boiral, Talbot, & Paillé, 2015; Norton et al., 2014; Temminck, Mearns, & Fruhen, 2015). Nevertheless, mediating role of individual-level factors (e.g., environmental attitudes) in the relationship between individual-level predictors and more specific, emerging task-related EGB is mostly under-explored in extant literature. Such deficiency calls for further investigation into the factors that will mediate the traditional relationship between predictors and task-related EGB (Norton et al., 2015). This investigation would shed more light on specific predictors and their incremental role in motivating task-related EGB, helping policy-makers in better strategy formulation. Fourth, most research on EGB is limited to Western countries context (Kim, Kim, Choi, & Phetvaroon, 2019; Shen, Dumont, & Deng, 2018). It is also argued that, to some extent, pro-environmental behaviors are specific to beliefs, demographics, and contexts (Borthakur & Govind, 2016), necessitating further studies in different socio-demographic and cultural settings.

This study therefore makes at least three major contributions to existing pro-environmental behavior literature. First, as recommended by previous researchers (Norton et al., 2015; Russell, Young, Unsworth, & Robinson, 2017) several cognitive and non-cognitive factors including employee motivations, green work climate perceptions of the organization, environmental concerns, and pro-environmental habits are added to TPB to specifically examine task-related EGB. In particular, a pro-environmental habit is integrated in the current research model to overcome the TPB's shortcoming of predicting recurring-nature pro-environmental behaviors. Meanwhile, several studies have prescribed incorporating pro-environmental habits in evaluating environmentally-friendly behaviors in workplace settings (Klöckner, 2013; Wang, Wang, Ru, Li, & Zhao, 2019). Besides, prominent school of thoughts have unequivocally endorsed the significance of work climate (Schneider, Ehrhart, & Macey, 2013), employee motivations (Gagné & Deci, 2005), and environmental concerns (Daily, Bishop, & Govindarajulu, 2009) in assessing employee behavior, leading this study to explore such predictors in promoting the task-related EGB. Second, the integration of cognitive and non-cognitive factors to the basic TPB in the current study is a fresh approach in the domain of task-related EGB, which enriches the extant understanding of micro-level (i.e., individual-level) factors' contribution to promoting the task-related EGB. Third, upon presenting the theoretical arguments, this study empirically tests the robustness of environmental attitudes and pro-environmental habits as mediator. In this connection, a serial mediation link (intrinsic motivations → pro-environmental habits → environmental attitudes → task-related EGB) is proposed and examined which is another unique contribution of this study to the existing EGB literature. In the realm of environmental management and human resource management literature, this study provides a new research direction by empirically validating several employee-level cognitive and non-cognitive factors. In practice, the current study's findings would facilitate a better formulation of firms' corporate environmental policy and strategy at the individual employee-level to sustain individual-level pro-environmental behaviors in the workplace.

Following this introduction, the rest of this paper is structured as follows. First, relevant literature is discussed relating to the study's variables and corresponding hypotheses and conceptual model. Second, the methodology of the study is discussed, followed by analysis of those results, and then a discussion of the key results and contributions (theoretical and

practical). This paper ends with an outline of the study's limitations, as well as potential future research avenues and a conclusion.

2. LITERATURE AND HYPOTHESES

2.1 Theory of Planned Behavior

A recent meta-analysis (Morren & Grinstein, 2016) reports TPB being applied by many studies on pro-environmental behavior, especially those examining the relationship between environmental attitudes and behaviors (Kautish, Paul, & Sharma, 2019; Yazdanpanah & Forouzani, 2015). The original TPB assumes three antecedents (attitude toward behavior, subjective norm, perceived behavioral control) of behavioral intention leading to actual behavior. While behavioral intention is integrated as a major predictor of behavior in the original TPB, Ajzen (2020) later argues that intention is not always likely to predict behavior and changes in intention will not necessarily lead to change in behavior. Ajzen (2020) suggests certain conditions where intention may not predict actual behavior. Socially desirable behavior (e.g. pro-environmental behavior) is such a condition where intention tends to be biased compared to when confronted with actually engaging in the behavior (Ajzen, 2020). Similarly, Davies, Foxall, and Pallister (2002) posited that behavioral intention is merely an expression of support rather than an important predictor of actual green behavior. Hence, in line with similar study (e.g., Moser, 2016), the current study integrates behavior as the outcome variable and excludes behavioral intentions in the model.

2.2 Task-related EGB

EGB has been defined as "scalable actions and behaviors that employees engage in or bring about that are linked with, and contribute to environmental sustainability" (Ones & Dilchert, 2012, p. 87). As illustrated in the introduction, more specific task-related EGB is perceived as pro-environmental behaviors performed by an employee within the framework of designated work tasks (Bissing-Olson et al., 2013). That is, it refers to a deliberate consideration of environmental protection while completing core job duties.

2.3 Environmental attitudes

Attitude has been defined as the extent that an individual evaluates or assesses a behavior or situation positively or negatively (Ajzen, 1991). Environmental attitude is a key construct in

green behavior literature, which indicates a positive relationship between pro-environmental attitudes and pro-environmental behaviors (Ashraf, Hou, Kim, Ahmad, & Ashraf, 2020; Bissing-Olson et al., 2013; Taufique, Vocino, & Polonsky, 2017). Some past studies have reported that this relationship is also pertinent in workplace settings. For example, Bissing-Olson et al. (2013) reported that employees' pro-environmental attitudes positively impact on both task-related and voluntary pro-environmental behaviors. Such attitudes have been identified as a primary influencer on waste reduction (Li, Zuo, Cai, & Zillante, 2018) in the workplace. However, in the developing countries context, some studies on pro-environmental consumer behavior illustrated non-significant impact of pro-environmental attitudes (Dixit & Badgaiyan, 2016; Taufique & Islam, 2021). These paradoxical findings trigger interest in further examining the influence of environmental attitudes on pro-environmental behavior in the workplace, especially in developing countries context. Hence, it is reasonable to posit that when employees perceive that behaving in environmentally-friendly ways is a good and wise decision, then they would display task-related EGBs in the workplace. Such predisposition is also in line with TPB (Ajzen, 1991), suggesting attitudes predict behavior. Drawing on this discussion, this study proposes the following hypothesis:

H1. *Environmental attitudes has a significant positive effect on task-related EGB.*

2.4 Subjective norms

Subjective norms have been defined as "the perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991, p. 188). It is a reference point for individual decision-making, measuring the influence of social pressures to perform in a particular way (Russell et al., 2017). Past studies have reported that subjective norms can have a strong, positive influence on green consumer behavior (e.g., Taufique & Vaithianathan, 2018; Yarimoglu & Gunay, 2020). In the context of this study, Gino and Bazerman (2009) provided empirical evidence of its role in understanding ethical behaviors within workplace settings. The influence of subjective norms on social behaviors has also been recognized as greater in workplaces where more group belongingness and informal relationships exist among employees (Husted & Allen, 2008).

The theoretical base regarding the influence of subjective norms on pro-environmental behaviors also lies in the Social Identity Theory, which outlines that individuals are prone to

categorize and classify themselves in regard to other social classifications or groups (Stets & Burke, 2000). This is therefore argued that employees experiencing higher levels of social identification with other social members (e.g., peers, friends) are largely influenced by those members. Consequently, expectations of environmentally-friendly behaviors by those influential members might have a strong impact on employees' pro-environmental behaviors. This could be further explained by the Impression Management Theory in organizations suggesting employees' behavior is shaped by their perception of how they are viewed by their colleagues or supervisors (Bozeman & Kacmar, 1997). In this context, Wesselink et al. (2017) illustrated that employees' pro-environmental behaviors in the workplace are significantly and positively influenced by perceived opinions regarding the performance of colleagues' pro-environmental behaviors. In line with this, it is conjectured that as task-related EGB involves environmental consideration in performing assigned tasks, subjective norms or perceived social demand might play a crucial positive role. This is therefore postulated that:

H2. *Subjective norms have a significant positive effect on task-related EGB.*

Interestingly, several former studies also demonstrated the important link between subjective norms and environmental attitudes in the context of green consumer behavior. For example, Han, Hsu, and Sheu (2010) reported positive impact of subjective norms on attitude toward staying at a green hotel, and urged not to overlook such essential link in subsequent green behavior literature. In response, some recent studies on organic food consumption also validated the positive role of subjective norms in forming attitude toward pro-environmental behaviors (Bai, Wang, & Gong, 2019; Scalco, Noventa, Sartori, & Ceschi, 2017; Testa, Sarti, & Frey, 2019). In a collectivistic society like Bangladesh, where individuals value the opinion of important others, subjective norms arguably have positive impact on shaping individuals' environmental attitudes. Yet empirical examination of such a link is largely under-explored in extant EGB literature. In an attempt to abridge this gap, this study hypothesizes that:

H3. *Subjective norms have a significant positive effect on environmental attitudes.*

2.5 Perceived behavioral control

Perceived behavioral control has been defined as "the perceived ease or difficulty of performing the behavior" (Ajzen, 1991, p. 188), further explained as a person's perceptions of both the availability and self-assessment of resources and opportunities necessary to perform a specific behavior (Ajzen, 2005). Several former studies have suggested that if individuals do not have control over a particular behavior due to deficient skills and resources, they are less likely to develop positive behavioral intention toward performing it, even where positive attitudes and subjective norms exist (e.g., Baker, Al-Gahtani, & Hubona, 2007; Kalafatis, Pollard, East, & Tsogas, 1999). The influential role of perceived behavioral control is well-documented in green consumption literature (Chen, 2020; Testa et al., 2019; Torres-Ruiz, Vega-Zamora, & Parras-Rosa, 2018; Yarimoglu & Binboga, 2019). Additionally, in relation to the purchase of remanufactured products and new environmentally-friendly vehicles, perceived behavioral control has been reported as a significant positive predictor (He et al., 2021; Wang, Wang, Yang, Wang, & Li, 2018).

In the context of this study, perceived behavioral control has been recognized as a positive influencer in managers' intention toward ethical behavior (Kashif, Zarkada, & Ramayah, 2018). The positive impact of perceived behavioral control has also been inferred with regards to a supply manager's environmentally-responsible behavior (Swaim, Maloni, Henley, & Campbell, 2016), workplace health promotion behavior (Röttger et al., 2017), and the waste reduction behavior of construction contractor employees (Zhu & Li, 2012). However, existing literature on pro-environmental behavior in the workplace provides imprecise findings regarding the influence perceived behavioral control. Specifically, while two former studies (Boiral et al., 2015; Cop, Alola, & Alola, 2020) found perceived behavioral control as a significant positive predictor, another study (Wesselink et al., 2017) found it as insignificant. This calls for further empirical examination of the connection between perceived behavioral control and pro-environmental behavior in workplace settings.

Given that context-specific task-related EGBs are at the discretion of employees, certain level of confidence, skills, and opportunities (i.e., controls) are required by employees to perform such behaviors. Besides, the absence or presence of the required cost and time might be perceived as a facilitator or inhibitor in stimulating pro-environmental behaviors in the workplace. For example, conducting video conferencing instead of face-to-face meeting involves technical skills, and mastering such skills requires additional time and cost. In sum, employees with adequate control

over task-related behaviors (e.g., printing on both sides of a paper) and confidence in positive environmental impact of such behaviors are more likely to act in environmentally-friendly ways. Conversely, absence of perceived controls (e.g., it might be required by the organization to print one-sided or print drafts for proofreading) would induce low level task-related EGBs. Building on these arguments and empirical supports, it is proposed in this study that:

H4. *Perceived behavioral control has a significant positive effect on task-related EGB.*

2.6 Employee motivations

Employee behavior in the workplace was initially examined in the context of intrinsic and extrinsic work motivations (Porter & Lawler, 1968; Vroom, 1964). Intrinsic motivation often arises from the positive internal feelings (e.g., satisfaction, sense of achievement) a person experiences in performing a particular task (Porter & Lawler, 1968). Extrinsic motivation involves workplace behavior where purposes of action go beyond intrinsic satisfaction to external rewards (e.g., bonus, promotion) (Gagné & Deci, 2005).

The Cognitive Evaluation Theory (CET) (Deci & Ryan, 1980) suggests that extrinsic motivational factors, at least in part, undermine intrinsic motivation in fostering pro-environmental behaviors, which was further verified by Deci, Ryan, and Koestner (1999). Similarly, Ciocirlan (2017) posited that extrinsic motivations are the least influential techniques in triggering pro-environmental behaviors in the workplace. It was also argued that extrinsic motivations are counterproductive to employees' intrinsic motivations in driving pro-social behaviors in workplace settings (e.g., mitigating carbon emissions) (Dahlmann, Branicki, & Brammer, 2017; Ioannou, Li, & Serafeim, 2016; Katsikeas, Leonidou, & Zeriti, 2016). Recent study uncovers that extrinsic motivations are inversely associated with an employee's green behavior (Graves, Sarkis, & Gold, 2019). Based on these theoretical and empirical evidences, this study assumes that extrinsic or external motivations are not particularly significant in predicting task-related EGBs.

In contrast, intrinsic motivation has been regarded as a positive predictor of individual's behavior to protect and improve the environment in the workplace (Govindarajulu & Daily, 2004). Intrinsically motivated employees engage in pro-environmental behaviors if such behaviors are consistent with their beliefs and interests (Judge, Erez, Bono, & Locke, 2005) as well as generate collective good (Afsar, Badir, & Kiani, 2016). That means, when employees

perceive that the assigned tasks are fun, interesting, and pleasurable (e.g. having an online meeting) then they are more likely to complete the task in environmentally-friendly ways. In some cases, pro-environmental behaviors (e.g., task-related EGBs) involve cognitively intricate tasks requiring considerable level of creativity and innovations (e.g., designing a green product) that are closely tied to intrinsic motivations (Pelletier, 2002). Successively, the Self-Determination Theory (SDT) (Deci & Ryan, 1985; Gagné & Deci, 2005) postulates that intrinsic motivation is positively related to employee behavior in the workplace. In line with this, most former EGB studies reported positive association between EGB and employee intrinsic motivations (Afsar et al., 2016; Junsheng, Masud, Akhtar, & Rana, 2020; Krause, Droste, & Matzdorf, 2021), while one study did not identify this relationship as significant (Graves et al., 2019). Having these equivocal findings of the influence of employee motivation on employee's general green behavior, testing the impact of intrinsic motivation on employee's task-related green behavior remains unexplored. Thus, the following hypothesis was proposed in this study:

H5. *Intrinsic motivations has a significant positive effect on task-related EGB.*

2.7 Pro-environmental habits

Several researchers have criticized the TPB for not incorporating habits as a predictor for individual behavior (e.g., Klöckner, 2013; Triandis, 1977), and have recommended its inclusion (Verplanken & Aarts, 1999). It has been recognized that behaviors requiring routine performance (is frequently performed) are largely influenced by habits (Verplanken & Aarts, 1999). Perceived as spontaneous reactions to relatively constant situations, which are functional in attaining objectives, habits are often developed by repeatedly performing similar behaviors in similar situations (Klöckner, 2013). If it relates to "changing habits into more environmentally-friendly ones" then it is termed as pro-environmental habits (Dahlstrand & Biel, 1997, p. 593).

Many past studies have identified the impact of pro-environmental habits on pro-environmental behaviors across different contexts. Drawing on the Muster and Schrader (2011)'s "green-work life balance", Ciocirlan (2017) inferred that an employee who displays environmentally-friendly behaviors in non-workplace situations is highly expected to replicate such behaviors in the workplace. Empirically, a significant positive relationship was found between pro-environmental habits and intention toward food waste behavior (Russell et al.,

2017), as well as between pro-environmental habits at home and employee intention to conserve electricity in the workplace (Wang et al., 2019). Yet no former study has directly examined whether individual's non-task-related pro-environmental habits may influence task-related EGB. To this end, we argue that the underlying positive connection between pro-environmental habits and task-related EGB relates to three features of habit itself.

First, the routine nature of task-related employee behavior involves repetitions of assigned tasks (e.g., preparing a business letter), and repetition, in turn, is one of the core tenets of habit (Kurz, Gardner, Verplanken, & Abraham, 2015; Verplanken & Roy, 2015). Accordingly, we conjecture that an employee with strong non-task-related pro-environmental habits (e.g., conserve resources, recycle waste at home) would naturally repeat such behavior in task-related settings, such as by not printing the draft of a business letter or printing the draft in a scrap paper if essential. That means, employees' non-task-related environmentally-friendly habits would be positively reflected in formal workplace settings in a repeated manner.

The second important property of habit is automaticity (Kurz et al., 2015; Verplanken & Roy, 2015), which activates stimulus-response relation, such as making decisions (stimulus) - report preparation (response). The automaticity element of pro-environmental habits therefore guides an employee to automatically perform the required tasks in environmentally-friendly manners (e.g., preparing and editing the report electronically).

Third, task-related EGBs are context-specific, which is however another feature of habit (Kurz et al., 2015; Verplanken & Roy, 2015). In fact, habit better predicts tasks that are performed in a relatively stable context (Verplanken, Aarts, Van Knippenberg, & Moonen, 1998). As such, we posit that task-related EGBs are associated with a formal, workplace context in which employees can positively reiterate their non-task-related environmentally-friendly habits. Based on these arguments, the following hypothesis was put forward in this study:

H6. *Pro-environmental habits has a significant positive effect on task-related EGB.*

Habitually performed behavior might create positive feeling toward the behavior. For example, habit of reading daily press leads to having positive attitude toward offline news delivery channels (Flavián & Gurrea, 2009). In workplace context, Kashif, Zarkada, and Thurasamy (2017) found that past behavior positively predicts managers' attitude toward making

an ethical decision in the future. In line with this, we argue that if pro-environmental behaviors become habitual in everyday life, it is more likely to generate positive environmental attitudes. Thus, it is hypothesized that:

H7. *Pro-environmental habits has a significant positive effect on environmental attitudes.*

Another potential link that is worth examining is between intrinsic motivations and pro-environmental habits. An intrinsically motivated person spontaneously performs activities that are interesting and pleasurable (Gagné & Deci, 2005). Given such motivation is related to environmental protection, a person prefers to continue those activities that positively impact on stakeholders (e.g., family members, colleagues, neighbors) (Ciocirlan, 2017). For example, environmentally-motivated persons conserve water and electricity in daily life considering collective good of such activities which in turn may become their habits. Simply put, intrinsic motivations to protect the environment may foster pro-environmental habits among individuals. In light of this, this study proposes that:

H8. *Intrinsic motivations has a significant positive effect on pro-environmental habits.*

2.8 Green work climate perceptions

A green work climate has been described as employee perceptions and interpretations of organizational policies, procedures, and practices pertaining to environmental protection (Norton, Zacher, & Ashkanasy, 2012; Norton et al., 2014). In the organizational psychology literature, the idea of employee's work climate perceptions is related to injunctive norms which is emerged from the Theory of Normative Conduct (TNC) (Cialdini, Reno, & Kallgren, 1990). Injunctive norms are kind of "approved of" norms that can be defined by the social systems, organizational policies and procedures (Tian, Zhang, & Li, 2020). Thus, when an employee recognizes his/her company to have pro-environmental policies and practices, then the injunctive norms might be that the organization approves of environmentally-friendly behaviors (Norton et al., 2014). Besides, the Person-Organization Fit (P-O fit) Theory (Chatman, 1989) postulates that individual behaviors are better anticipated by the interplay between the person and the organization than each of them does independently. Optimal results (e.g., firm's environmental

performance, employee retention) are accomplished when personal and organizational traits are well-matched with each other (Van Vianen, 2018). Drawing on the P-O Fit Theory, it can be argued that when employees can better relate them with organizational concerns for environment (that are transmitted through green work climate), then task-related EGBs are escalated.

In fact, most individual employees do not engage in green behavior unless their organizational policies and regulations require them to do so (Lasrado & Zakaria, 2019). The organization's environmental concerns and green initiatives driven by senior management are likely to encourage more EGB in the workplace (Muduli et al., 2020; Pellegrini, Rizzi, & Frey, 2018). In particular, forming green work climate perceptions among employees by promoting green policies and practices, an organization can augment task-related EGBs. For instance, to comply with green banking policies, a bank employee would tend to save electricity by turning off computers when not in use or provide account statement's softcopy to customers instead of printing it. Yet while some former studies have reported a significant positive impact of the green organizational climate on employees' pro-environmental behavior (Hicklenton, Hine, & Loi, 2019; Zientara & Zamojska, 2018), none have explicitly investigated this in a task-related EGB context. Hence, this study formulates the following hypothesis:

H9. *Green work climate perception of an organization has a significant positive effect on task-related EGB.*

2.9 Environmental concerns

Environmental concern refers to "the degree to which people are aware of problems regarding the environment, and support efforts to solve them and/or indicate a willingness to contribute personally to their solution" (Dunlap & Jones, 2002, p. 485). Value-Basis Theory suggests environmental concern instills values in people for themselves, for other people, and for all other living organisms (e.g., plants, animals) (Stern & Dietz, 1994). Hence, when people recognize that any damage done to the nature will eventually hurt them, their dear ones, or other living organisms, they become more environmentally concerned and are expected to involve in pro-environmental behaviors. For example, a person might become concerned about water pollution if he/she perceives that water pollution is detrimental to one's health and agriculture (Stern, Kalof, Dietz, & Guagnano, 1995). As environmentally-concerned individuals are more prone to

exhibit environmentally-friendly behavior (Czap & Czap, 2010), 'environmental concerns' has been a constant subject of interest within marketing and consumer behavior research (Albayrak, Aksoy, & Caber, 2013). Accordingly, several former studies endorsed the positive role of environmental concerns in the context of pro-environmental consumer behavior (Dangelico, Nonino, & Pompei, 2021; Sadiq, Adil, & Paul, 2021; Testa, Iovino, & Iraldo, 2020).

The importance of employee's environmental concern in a workplace setting has also been recognized. To this effect, Daily et al. (2009) proposed that environmental concerns positively motivate organizational citizenship behavior toward the environment (OCBE) which was later validated by Temminck et al. (2015). Recent study further asserts that hotel employees' environmental concerns positively affect their pro-environmental behaviors in the workplace (Zhang & Huang, 2019). In a similar vein, environmental concerns may positively influence task-related EGB, in that task-related EGBs are directed toward environmental protection. Specifically, being concerned for the environment, an employee might engage in pro-environmental behaviors out of personal morals, which are likely to be transferred into his/her routine tasks (e.g., saving a paper, designing green products) in the workplace. Thus, it is hypothesized in this study that:

H10. *Environmental concern has a significant positive effect on task-related EGB.*

2.10 The mediating role of environmental attitudes and pro-environmental habits

Ideally, it is not enough to inspect only the direct impact of A on B and B on C, when B is mediating the connection between A and C (Baron & Kenny, 1986). In such cases, analysis should be performed to check the mediating role of a particular factor. A mediator elucidates why or how its antecedent generates its outcome variable (Frazier, Tix, & Barron, 2004).

Here, in consistent with H1 and H3, we assume that environmental attitudes positively mediate the relationship between subjective norms and task-related EGB. Empirical evidences also suggest such link in the green consumption literature (e.g., Bai et al., 2019; Han et al., 2010). In light of this, we contend that the perceived social demand from significant others stimulates positive environmental attitudes among employees, leading them to induce environmental behaviors in the workplace. Hence, it is posited that:

H11. *The relationship between subjective norms and task-related EGB is positively mediated by environmental attitudes.*

Second, in congruent with H1 and H7, this study speculates that environmental attitudes positively mediate the relation between pro-environmental habits and task-related EGB. That is, environmentally-friendly habits of daily life would motivate individuals to perceive pro-environmental behaviors positively, which would eventually strengthen task-related EGBs. Accordingly, it is posited that:

H12. *The relationship between pro-environmental habits and task-related EGB is positively mediated by environmental attitudes.*

Third, in relation to H6, H7, and H8, we presume that pro-environmental habits play a positive mediating role in the relationships between intrinsic motivations and environmental attitudes as well as intrinsic motivations and task-related EGB. In other words, higher levels of intrinsic motivations generate more pro-environmental habits, which in turn leads to positive environmental attitudes. Besides, past studies asserted that intrinsic motivations contribute to forming or at least, accelerate habits which further influence individuals' future activities (Gardner & Lally, 2013; Judah, Gardner, Kenward, DeStavola, & Aunger, 2018). For example, Gardner and Lally (2013) outlined that intrinsic motivations (e.g., internal satisfaction derived from a activity) strengthen an individual's habit formation that envisages future physical activity (e.g., running, playing basketball). In line with this, we argue that intrinsic motivations for environmental protection can reinforce task-related EGB by elevating pro-environmental habits. Drawing on these discussions, following hypotheses are proposed:

H13. *The relationship between intrinsic motivations and environmental attitudes is positively mediated by pro-environmental habits.*
H14. *The relationship between intrinsic motivations and task-related EGB is positively mediated by pro-environmental habits.*

Taken together, intrinsic motivations, pro-environmental habits, environmental attitudes, and task-related EGB are interrelated in that intrinsic motivations indirectly influence task-related EGB through pro-environmental habits and environmental attitudes. In particular, we surmise that employees having high intrinsic motivations toward environmental protection would develop more pro-environmental habits and positive environmental attitudes, and eventually that would translate into greater levels of task-related EGB. Simply put, intrinsic motivations impact task-related EGB through a serial mediation procedure. Accordingly it is hypothesized that:

H15. *Pro-environmental habits and environmental attitudes serially mediate the relationship between intrinsic motivations and task-related EGB.*

Figure 1 below presents the hypothesized relationships in this study's proposed conceptual model:

[Insert Figure 1 here]

3. METHODS

3.1 Measures

This study has used previously validated measures to maintain the content validity (Hair, Black, Babin, & Anderson, 2014), which were slightly adjusted to the research context. In line with Hinkin's (1998) guidelines, all measures were written in a simple, easy-to-understand language. It is worth noting that environmental attitudes and intrinsic motivations were measured using emotional scales in a sense that environmental attitudes are affected by emotions (He et al., 2021) and intrinsic motivations are aroused internally (Porter & Lawler, 1968) having explicit link with emotions. The measurement items were reviewed and evaluated by three voluntary academic experts from the departments of marketing, human resource management and psychology, to avoid vagueness and redundancy, and to ensure precision. A pilot survey was first conducted with 23 employees from the University of Barishal, Bangladesh with changes accordingly made to some of the question wording. A 5-point Likert scale was used (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) for all measures. A list of the measurement items and their sources is presented in Appendix 1.

3.2 Sample and data collection

Recruiting through convenience sampling, the participants were all full-time employees who had worked for at least one year in a public or private organization in Bangladesh, including three public universities, five private banks, and the country's largest private telecom company (i.e., Grameenphone). Most participants from all organizations were at their mid-career level. Both face-to-face and online surveys (Chaudhary, 2020; Heras-Saizarbitoria, Boiral, Allur, & García, 2020; Smirnova, Rebiazina, & Frösén, 2018) were used for data collection, with five graduate students from three public universities undertaking the face-to-face surveys. The data collection period was from February to May 2019, with a total of 550 questionnaires sent out and 340 responses received (225 face-to-face and 115 online); 302 responses were deemed as useable. This final sample size was recognized as analogous with previous similar studies (e.g., Chaudhary, 2020; Norton et al., 2014).

Participants' disclosure to environmental responsibilities was warranted by taking into consideration of several institutional policies and practices. For example, environmental responsibilities of bank employees are guided by Bangladesh central bank's 'Green Banking' regulations (Khairunnessa, Vazquez-Brust, & Yakovleva, 2021). Similarly, employees of the selected telecom company are steered by its 'Click Green' project and 'Climate Change Program' (Grameenphone, 2021) to perform pro-environmental behaviors in the workplace. Moreover, we ran Non-parametric Kruskal-Wallis tests that showed no significant differences in terms of reporting task-related EGBs among participants across industries ($\lambda^2 = 3.169$, df = 2, p = .205) (Afsar, Cheema, & Javed, 2018). We also performed the Levene's homogeneity of variance test to check for potential sample bias. Results indicate that responses to almost all items are not significantly different across industries, representing that heterogeneity of respondents is not exerting any significant impact on the analysis (Baumert & de Obesso, 2021).

To minimize potential social desirability and other relevant biases, we outlined an opening paragraph detailing data confidentiality, respondents' anonymity, and the exclusive academic purpose of this study to ease the respondents for their spontaneous answer (Heras-Saizarbitoria et al., 2020). Besides, we highlighted that there are no right or wrong answers (Zhang & Zhu, 2019) and no responses would be generalized to specific institutions or employees.

3.3 Method bias

Several procedural precautions and statistical remedies were adopted to mitigate possible common method bias (CMB) due to the use of cross-sectional single-source data. First, we outlined an opening paragraph as stated above in mitigating social desirability bias. Second, we obtained the measurement items from alternative sources and used a four-month time-lag of data collection. Third, we eliminated the ambiguity by making all questions simple and specific to the context as well as labeling every point on the response scale (Krosnick, 1991). Fourth, we placed the questions of different constructs, including predictor and criterion, in distinct sections to eliminate proximity effects. As for statistical remedies, first, Harman's Single Factor test was performed by running an un-rotated factor solution. The calculated single factor accounts for only 27.64% of variance which is quite less than the threshold value of 50% (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), indicating the non-existence of CMB. Second, Harman's Single Factor test was performed using CFA. In consequence, the single-factor model revealed a poor model fit (GFI = .454; AGFI = .373; NFI = .358; TLI = .335; CFI = .381; SRMR = .156 and RMSEA = .167), affirming the absence of CMB (Malhotra, Kim, & Patil, 2006). Third, we estimated the latent common factor method, allowing the observed variables to load on their theoretical constructs and on a common latent factor (CLF) (Podsakoff et al., 2003). Then, the fit indices of the two models (with and without the CLF) were compared. The resulting fit indices of the model with the CLF (χ^2/df = 1.322, RMSEA = .033, CFI = .978, NFI = .916; TLI = .975; AIC = 675.230) were similar to that of the model without the CLF (χ^2/df = 1.319, RMSEA = .033, CFI = .978, NFI = .916; TLI = .975; AIC = 673.230), confirming that CMB is not a concern (Zhao, Zhou, He, & Jiang, 2021). Besides, a smaller value of Akaike information criterion (AIC) for model without the CLF mitigates the potential threat of CMB (Paillé & Raineri, 2015).

3.4 Control variables

Former studies depicted that demographic variables influence EGB (e.g., Dumont, Shen, & Deng, 2017). Hence, we controlled for employees' age, gender, education, and organizational sector.

4. ANALYSIS AND RESULTS

This study used principal component analysis (PCA) and structural equation modeling (SEM) with confirmatory factor analysis (CFA). SEM was used due to its aptness for theory testing (Hu

& Bentler, 1999). Besides, SEM facilitates testing of proposed relationships among multiple variables concurrently, enabling the estimation of both latent and observed variables simultaneously. Importantly, SEM accounts for measurement errors in the observed variables to be evaluated (Hair et al., 2014; Hu & Bentler, 1999). Both SPSS (version 23) and AMOS (version 23) software packages were used for data analysis. Table 1 below presents the sample characteristics.

[Insert Table 1 here]

4.1 Principal component analysis

PCA using varimax rotation with Kaiser normalization was performed to determine the factor structure of the measurement scales. Specifically, we used full-design factor analysis with rotated component matrix. KMO and Bartlett's Test of Sphericity were calculated to indicate the acceptance level of sampling adequacy. This study had a KMO value of 0.875, which is well above the suggested value (Tabachnick & Fidell, 2014). Bartlett's Test of Sphericity was also significant (.000<.05) for the factor analysis, which was considered appropriate (Hair et al., 2014).

The PCA extracted eight factors with eigenvalues exceeding 1.0, which explained 76.64% of the total variance. Factor loadings greater than 0.70 are indicative of a distinct factor structure (Hair et al., 2014). In addition, the alpha values were well above the widely accepted threshold of 0.70 (Nunnally, 1978), representing good internal consistency among the measurement items. Table 2 below presents a summary of the corresponding PCA results.

[Insert Table 2 here]

4.2 Measurement model

This study's measurement model assessed construct reliability, convergent validity, and discriminant validity. In line with past studies (Boiral & Paillé, 2012; Uddin, Biswas, Bhattacharjee, Dey, & Mahmood, 2021), this study also contrasted several alternative models in which eight-factor model showed a better model fit (see results in table 3 below). Thus, the analysis measured 30 items of 8 constructs. As reported in Table 2, all the constructs had

composite reliability (CR) and Cronbach's alpha (α) greater than 0.70, satisfying the criteria for construct reliability (Straub, 1989). The factor loadings (λ) ranged from .724 to .899, CR from .839 to .933, and AVE from .604 to .736, which were all well-above the cut-off value for meeting the conditions of convergent validity of measurement scales (Fornell & Larcker, 1981; Hair et al., 2014). The overall measurement model confirmed a good fit as follows: $\chi^2/df =$ 1.319, GFI = .901, AGFI = .878, CFI = .978, TLI = .975, RMSEA = .033, and SRMR = .035 (Hair et al., 2014; Hu & Bentler, 1999).

[Insert Table 3 here]

Discriminant validity is shown in Table 4 below, with a correlation matrix of the constructs, where non-diagonal elements represent correlation among constructs, and diagonal elements represent square root of AVE by that construct. All eight factors differed from each other, and all the diagonal elements exceeded inter-construct correlation coefficients, satisfying Fornell and Larcker's (1981) criteria for discriminant validity.

[Insert Table 4 here]

4.3 Structural model

In the structural model, a necessary condition is that the endogenous variable's error term is uncorrelated with each of the exogenous variables. The occurrence of such a correlation is due to (i) the correlation between endogenous and exogenous variables' disturbance; (ii) the reverse causation (the endogenous variable impacts on one of its causal variable); (iii) a single-item endogenous variable (Kenny, Kashy, & Bolger, 1998). However, our structural model is devoid of all mentioned cases, suggesting that the instrumental variables are nonessential in the current model. Accordingly, based on the satisfactory measurement model, this study analyzed the structural model to test the hypotheses (see results in table 5 below). The proposed conceptual model provided a good fit with the values as follows: χ^2/df = 1.567, GFI = .877, AGFI = .845, CFI = .952, TLI = .943, RMSEA = .043, and SRMR = .098 (Hair et al., 2014; Hu & Bentler, 1999).

[Insert Table 5 here]

Table 5 shows that the predictors in the model explain 38.3% (r^2 =.383) variations in task-related EGB. Employees' intrinsic motivations was found as a significant and positive predictor of task-related EGB with its highest coefficient (β=.25, p<.001), followed by subjective norms (β =.16, p<.05), environmental concerns (β =.15, p<.05), environmental attitudes (β =.15, p<.01), pro-environmental habits (β =.14, p<.05), green work climate perceptions (β =.14, p<.05), and perceived behavioral controls (β=.13, p<.05). Accordingly, H1, H2, H4, H5, H6, H9 and H10 were supported, indicating that environmental attitudes, subjective norms, perceived behavioral controls, intrinsic motivations, pro-environmental habits, green work climate perceptions, and environmental concerns have significant positive effect on task-related EGB.

In addition, Table 5 denotes that subjective norms (β=.20, p<.01) and pro-environmental habits (β =.19, p<.01) significantly and positively predict environmental attitudes, thereby substantiating H3 and H7. Collectively, subjective norms and pro-environmental habits explain 11% (r^2 =.106) variations in environmental attitudes. Besides, the result regarding H8 illustrates that intrinsic motivations have significant positive impact on pro-environmental habits (β=.24, p<.001).

4.4 Mediating effects

To test the mediating effects of environmental attitudes and pro-environmental habits we run bootstrapping analysis (2000 bootstrap samples with 95% confidence intervals). Table 6 manifests that subjective norms (β=.026, p<.05; 95% CI, [0.01, 0.06]) and pro-environmental habits (β=.029, p<.05; 95% CI, [0.01, 0.07]) have significant positive indirect influence on task-related EGB through environmental attitudes. Such effects are confirmed by the corresponding p values (p<.05) with 95% confidence intervals where upper and lower limit does not include zero, supporting H11 and H12. Similarly, the results corroborate that pro-environmental habits significantly and positively mediate the relationship between employee's intrinsic motivations and environmental attitudes (H13) as well as employee's intrinsic motivations and task-related EGB (H14).

In relation to H15, Table 6 attests a serial mediation link (intrinsic motivations → pro-environmental habits → environmental attitudes → task-related EGB), implying that employee's intrinsic motivations significantly and positively escalate task-related EGB by enhancing pro-environmental habits and environmental attitudes.

[Insert Table 6 here]

5. DISCUSSIONS

Human-sourced causes are mostly responsible for environmental degradation. This study therefore attempted to understand how exclusively micro-level or individual employee-level factors are contributing to sustaining pro-environmental behaviors in the workplace. In relation to that, the study integrated employee motivations, green work climate perceptions of an organization, pro-environmental habits, and environmental concerns as extensions to the Theory of Planned Behavior model, to examine their influence on task-related EGB. Environmental attitudes was subsequently identified as a significant positive predictor of task-related EGB, suggesting that employees holding stronger positive attitude toward the environment are more likely to engage in green behaviors at work. Thus, this finding in developing countries perspective accords with previous findings revealed in developed countries perspective (e.g., Bamberg & Möser, 2007; Bissing-Olson et al., 2013). Moreover, within workplace settings, this study extends past studies on the relations between consumers' pro-environmental attitudes and behaviors (Taufique et al., 2017; Testa et al., 2019) as well as managers' environmental attitudes and voluntary EGB (Cordano, Marshall, & Silverman, 2010) by manifesting that environmental attitudes also trigger task-related EGB.

The second confirmed hypothesis suggests that employees are largely influenced by the opinions of significant others (e.g., family members, friends, peers) in engaging with green behavior at work, which extends the finding of previous studies on the association of subjective norms with ethical behaviors (Gino & Bazerman, 2009), social behaviors (Husted & Allen, 2008), and pro-environment behaviors (Bamberg, 2003). That is, while former studies linked subjective norms with non-workplace ethical, social, and pro-environmental behaviors, our study extends those findings by revealing a positive relationship between subjective norms and green behaviors in workplace settings. Besides, this study's substantiated positive association between subjective norms and environmental attitudes underlines that opinions of important others can shape an individual's attitude toward environment. This finding also complies with Hofstede's (Hofstede Insights, 2021) assessment of collective society (e.g., Bangladesh) where perceived social pressure inspires an individual to think or act in a certain manner. In addition, despite former studies (Cop et al., 2020; Wesselink et al., 2017) provide equivocal findings regarding

perceived behavioral controls, our study finds it to have a significant effect on task-related EGB. That is, employees who believe they have adequate resources and opportunities to engage in pro-environmental behavior are more likely to be interested in task-related EGB. This is consistent with previous finding where perceived behavioral controls were identified as major predictors of ethical behavior in the workplace (Kashif et al., 2018), as well as students' pro-environment behaviors (Bamberg, 2003).

This study's examination of employees' intrinsic motivations uncovered that this can positively influence task-related EGB, implying that many employees view pro-environmental behavior as a reflection of their feelings of interest, pleasure, and fun. This accordingly enhances their commitment to green behaviors in the workplace. This finding relates to the Self-Determination Theory (SDT), arguing that intrinsic motivations influence employee's workplace behaviors. However, our findings extend such theoretical argument in a more specific task-related EGB setting. Relating to pro-environmental habits, this study reports three significant relationships. First, employees who are usually environmentally-friendly in home such as reducing water and electricity usage, are more likely to participate in task-related EGB in the workplace (H6). This outcome aligns with existing literature (Fielding, Russell, Spinks, & Mankad, 2012; Russell et al., 2017) that has reported the influence of habits on water conservation and food waste behavior respectively. Second, it is found that habitually performed pro-environmental behaviors engender positive environmental attitudes (H7), which is a relatively fresh finding in the context of EGB literature. Third, as expected, it is revealed that employees' intrinsic motivations toward environmental protection can fuel the formation of pro-environmental habits (H8).

The results also illustrate that employees' green work climate perceptions of an organization act as an influential precursor of task-related EGB. Through the lens of P-O Fit Theory, this finding suggests that augmented task-related EGBs occur when employees well-match themselves with organizational concerns for the environment or discover that environmentally-friendly behaviors are "approved of" norms in organizational policies and procedures. This study's results also show that environmentally-concerned employees are more motivated to 'act green' in the workplace, which is consistent with past findings in the context of both energy conservation (Bang, Ellinger, Hadjimarcou, & Traichal, 2000) and green purchasing (Albayrak et al., 2013; Dangelico et al., 2021).

The meditating analysis reveals that employees who are influenced by others' opinions are more likely to form positive environmental attitudes that further enhances their task-related EGB. This is further extension of previous studies in green consumption context (Bai et al., 2019; Han et al., 2010). This study also confirms the mediating effect of environmental attitudes in the relationship between pro-environmental habits and task-related EGB. In addition, employees' intrinsic motivations have significant positive indirect effect on environmental attitudes and task-related EGB through pro-environmental habits. The latter path (intrinsic motivations → pro-environmental habits → task-related EGB) extends the proposition that intrinsic motivations influence future physical activity through current habit formation (Gardner and Lally, 2013). The results also show that through a serial mediation process, employees' intrinsic motivations impact task-related EGB by reinforcing pro-environmental habits and environmental attitudes, which is a unique finding in the current EGB literature. The outcome therefore reveals that employees with high intrinsic motivations toward the environment develop more pro-environmental habits and positive environmental attitudes, which in turn, accentuate their task-related EGB.

6. THEORETICAL CONTRIBUTIONS

The first major theoretical contribution of the study relates to addressing the call for integrating additional cognitive and non-cognitive constructs to the TPB to better examine the complex and routine nature of EGB in the workplace (Norton et al., 2015; Wang et al., 2019; Zhang & Huang, 2019). Within the broad scope of EGB literature, the narrative of task-related EGB is emerging and inferences about its antecedents is still lacking (Salvador & Burciaga, 2020). Specifically, a handful of empirical studies (Norton et al., 2014; Pellegrini et al., 2018; Salvador & Burciaga, 2020) have mostly investigated the effect of organizational-level predictors, while there is inadequate finding regarding the impact of individual employee-level predictors on task-related EGB. This study thereby enriches existing EGB literature by providing empirical support that the integration of additional cognitive and non-cognitive factors relating to individual employee-level into the TPB better predicts task-related EGB.

Second, building on Social Identity Theory and Hofstede's cultural dimensions, this study confirms the significant positive influence of subjective norms on task-related EGB, which is a fresh contribution to the existing EGB literature. This study also confirms the link of two other new paths comprising pro-environmental habits and environmental attitudes as well as intrinsic

motivations and pro-environmental habits, offering critical theoretical insights for future researchers in EGB context. Moreover, by extending the contributions of Graves et al. (2019) and Zhang and Huang (2019), the association between employee's intrinsic motivations and task-related EGB suggests the relevance of Self-Determination Theory in explaining task-related EGB. Besides, this study's finding of a positive association between green work climate perceptions and task-related EGB endorses the importance of injunctive norms and P-O Fit Theory in promoting workplace pro-environmental behaviors.

Third, this study confirms that employees' pro-environmental habits directly and indirectly elevate task-related EGB. While former studies investigated the impact of habits on water conservation behavior (Fielding et al., 2012), energy-saving behavior, and food waste behavior (Russell et al., 2017), the results of our study theoretically and empirically reinforce the integration of habits as a non-cognitive construct into TPB in the context of task-related EGB in the workplace.

Fourth, the positive serial mediation role played by pro-environmental habits and environmental attitudes in the relationship between intrinsic motivations and task-related EGB is the strongest finding this study uncovered, making it unique to other related studies. In fact, former studies (Afsar et al., 2016; Bissing-Olson et al., 2013) in EGB context mostly considered these as independent factors, while our study additionally showed that intertwined relationship of these four factors is also influential in promoting green behaviors in the workplace.

7. PRACTICAL IMPLICATIONS

The study offers several practical implications relating to task-related EGB in the workplace. For example, it highlights how organizations can encourage positive attitudes toward task-related EGB via employee education about the importance of performing green behavior for both environmental benefit and positive business outcomes (e.g., energy savings, waste reduction) (Holme & Watts, 2000). This practice will also proliferate the influence of significant others (e.g., family members, friends, peers) who were found influential in performing task-related EGB. According to this study's finding, employees think 'in-group' in a collectivist culture, thereby practitioners (i.e., employers, environmentalists) could use the testimonials of important others who actually perform pro-environmental behaviors, in stimulating positive environmental attitudes and task-related EGB. Moreover, practitioners should provide employees with skills, information and resources (e.g., technologies) to facilitate task-related EGB. In addition,

perceived organizational support (Wesselink et al., 2017) including access to information and training regarding green behavior in the workplace might trigger more task-related EGB by enhancing perceived behavioral controls. Indeed, sufficient training and environment-related education would boost employees' environmental awareness and consequent pro-environmental performance in the workplace.

In addition, the findings indicate that practitioners should have sustainable organizational policies as well as suitable procedures and practices in place to communicate a comprehensible and constant message in relation to task-related EGB. The creation of a positive organizational climate that encourages environmental protection will likely lead to deeper employee understanding of corresponding organizational expectations. The results also suggest that most employees hold general environmental attitudes and behaviors that can be translated into the workplace. Thus, green work climate perceptions of an organization may create more positive attitudes toward task-related EGB.

This study also suggests that employees' habits and environmental concerns are largely reflected in their workplace behaviors. Hence, practitioners should encourage EGB not only in workplace settings but also in external activities such as choosing public transport or correctly dumping waste. In line with this, positive EGB activity could be highlighted in company communications such as brochures, websites, and other media, confirming to employees that such efforts are appreciated by the organization. This might also encourage non-green employees (i.e., those reluctant to act green) to exemplify pro-environmental behavior.

Besides, a serial mediation examination presented that an employees' intrinsic motivations have multiple paths of influencing task-related EGB. The influence of intrinsic motivations can be direct, or can be traced through pro-environmental habits as well as a path that comprises both the pro-environmental habits and environmental attitudes. This evidence reinforces the prominence of intrinsic motivations as a crucial factor in upholding task-related EGB and therefore strongly supports the communication of pro-environmental behaviors' benefits relating to personal (e.g., internal satisfaction), organizational, and environmental well-being. In sum, for an organization, communicating environmentally-friendly values and behaviors to its employees is as essential as communicating its goals to the consumers. Through such communication, an organization might embed a green culture across the organization, thereby form an "internal green marketing orientation" and subsequently sustain its overall environmental performance.

8. LIMITATIONS AND FURTHER RESEARCH DIRECTIONS

This study has several limitations opening potential directions for further research. First, this study used cross-sectional data that only investigated self-reported EGB, which may not adequately reflect actual workplace behavior. Besides, this study's causal inferences might contrast with respect to temporal effects. Future studies could therefore conduct on actual EGB preferably using longitudinal data. Nevertheless, limitation relating to cross-sectional data with single-source self-reported behavior seems to be commonplace in the existing EGB literature (Boiral & Paillé, 2012; Paillé & Raineri, 2015; Uddin et al., 2021). Second, the generalization of these findings may be limited by the use of participants from Bangladesh only, meaning their responses may have been affected by social, economic, business, and cultural nuances. Future cross-cultural studies would subsequently add strength to these findings. It could also be interesting to further examine whether the influence of cognitive and non-cognitive factors varies across demographics (e.g., gender, age, education). Third, despite this study's research design is in line with former studies in EGB context (e.g., Dumont et al., 2017; Norton et al., 2014), the multilevel modeling would be a better solution (Zientara & Zamojska, 2018) for exploring potential nested effects related to green work climate perceptions (i.e., perceptions tend to be similar within organizations and dissimilar between organizations among employees). Nonetheless, our data generate trivial amount of dependence across different industries (Level 1 model: intra-class correlation coefficients < .05 and intercept variance > .05), revealing no convincing evidence for performing a multilevel analysis (Heck, Thomas, & Tabata, 2013). Yet, we suggest that future studies can perform multilevel analysis to consider organization-level contextual influence in EGB research. Lastly, we do not make any conclusive claims regarding causality in this study, as there might have reverse causality between constructs (e.g., PHAB → TEGB could become TEGB → PHAB) and testing such potential relationships opens up an interesting and new avenue for future studies.

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Table 1 Sample characteristics

		Frequency	Percentage
Age	25-29	51	16.9
	30-34	76	25.2
	35-39	118	39.1
	40-44	41	13.6
	45+	16	5.3
Education	Graduate	82	27.1
	Postgraduate	217	71.9
	Above postgraduate	3	1.0
Gender	Female	68	22.5
	Male	234	77.5
Occupational sector	Public	179	59.3
	Private	123	40.7

Table 2 Summary of construct reliability and convergent validity results

Constructs	Indicators	α	AVE	CR	PCA load	CFA load (λ*)
Environmental attitudes (EATT)	EATT1	.910	.669	.910	.809	.745
	EATT2				.831	.836
	EATT3				.838	.865
	EATT4				.789	.850
	EATT5				.803	.788
Subjective norms (SN)	SN1	.861	.677	.863	.848	.834
	SN2				.846	.858
	SN3				.839	.775
Perceived behavioral controls (PBC)	PBC1	.835	.637	.839	.838	.724
	PBC2				.880	.873
	PBC3				.846	.790
Employee motivations (EM)	EM1	.858	.604	.859	.824	.744
	EM2				.822	.804
	EM3				.857	.831
	EM4				.775	.725
Pro-environmental habits (PHAB)	PHAB1	.879	.712	.881	.839	.801
	PHAB2				.871	.867
	PHAB3				.865	.861
Green work climate perceptions (GWCP)	GWCP1	.874	.637	.875	.813	.764
	GWCP2				.836	.826
	GWCP3				.813	.804
	GWCP4				.806	.798
Environmental concerns (EC)	EC1	.933	.736	.933	.782	.794
	EC2				.822	.862
	EC3				.851	.899
	EC4				.854	.873
	EC5				.850	.857
Task-related EGBs (TEGB)	TEGB1	.875	.705	.877	.791	.788
	TEGB2				.816	.898
	TEGB3				.835	.829

*All factor loadings (λ) are significant at $p < 0.001$

Note: α= Cronbach's alpha; AVE=average variance extracted; CR=composite reliability; PCA=principal component analysis; CFA=confirmatory factor analysis

Table 3 Exploring alternative models

Models	CMIN/DF	GFI	TLI	CFI	SRMR	RMSEA	Alternative models
One-factor model	9.436	.454	.335	.381	.156	.167	EATT+SN+PBC+EM+PHAB+GWCP+EC+TEGB
Two-factor model	8.285	.495	.426	.467	.170	.156	EATT+SN+PBC+EM, PHAB+GWCP+EC+TEGB
Three-factor model	6.698	.582	.551	.585	.148	.138	EATT+SN+PBC, EM+PHAB+GWCP, EC+TEGB
Four-factor model	5.581	.637	.639	.669	.140	.123	EATT+SN, PBC+EM, PHAB+GWCP, EC+TEGB
Five-factor model	4.491	.697	.725	.750	.122	.108	EATT+SN, PBC+EM, PHAB+GWCP, EC, TEGB
Six-factor model	3.445	.755	.807	.827	.109	.090	EATT+SN, PBC+EM, PHAB, GWCP, EC, TEGB
Seven-factor model	2.484	.814	.883	.897	.086	.070	EATT+SN, PBC, EM, PHAB, GWCP, EC, TEGB
Eight-factor model	1.319	.901	.975	.978	.035	.033	EATT, SN, PBC, EM, PHAB, GWCP, EC, TEGB

Abbreviations: EATT=environmental attitudes; SN=subjective norms; PBC=perceived behavioral controls; EM=employee motivations; PHAB=pro-environmental habits; GWCP=green work climate perceptions; EC=environmental concerns; TEGB=task-related EGBs.

Table 4 Discriminant validity

Variables	Occupational Sector	Education	Gender	Age	TEGB	PBC	SN	PHAB	EM	GWCP	EATT	EC
Control variables												
Occupational Sector	1											
Education	-.213*	1										
Gender	.124***	.025	1									
Age	-.202*	-.066	.010	1								
Latent variables												
TEGB	-.020	.020	-.050	.034	**.840**							
PBC	-.050	.066	-.106	.067	.274*	**.798**						
SN	.012	.018	.007	.022	.419*	.197**	**.823**					
PHAB	-.044	-.027	-.100	-.061	.386*	.182**	.325*	**.844**				
EM	-.023	.022	.065	-.074	.377*	.063	.268*	.213**	**.777**			
GWCP	-.012	.047	-.035	.026	.415*	.125	.332*	.371*	.291*	**.798**		
EATT	.147***	-.031	.018	-.079	.346*	.091	.231*	.249*	-.009	.288*	**.818**	
EC	.027	.034	-.046	-.060	.422*	.252*	.334*	.268*	.135***	.308*	.570*	**.858**
Mean					3.268	3.574	3.307	3.565	3.321	3.114	3.668	3.303
Standard deviation					1.008	0.943	1.044	0.939	0.792	1.038	0.771	0.904

*Significance level = *p < .001, **p < .01, ***p < .05*

Note: Bold diagonal values represent squared root of AVE values, and off-diagonal values represent the correlations of each construct with other constructs.

Abbreviations: TEGB=task-related EGBs; PBC=perceived behavioral controls; SN=subjective norms; PHAB=pro-environmental habits; EM=employee motivations; GWCP=green work climate perceptions; EATT=environmental attitudes; EC=environmental concerns.

Table 5 Results of direct effects

Hypothesis	Structural path	Std. estimate (β)	SE	*t* value	*p* value	Results
H_1	EATT → TEGB	0.151	0.087	2.622	0.009	Supported
H_2	SN → TEGB	0.159	0.056	2.425	0.015	Supported
H_3	SN → EATT	0.199	0.036	3.150	0.002	Supported
H_4	PBC → TEGB	0.132	0.064	2.228	0.026	Supported
H_5	EM → TEGB	0.252	0.085	3.918	0.000	Supported
H_6	PHAB → TEGB	0.144	0.059	2.470	0.014	Supported
H_7	PHAB → EATT	0.193	0.042	3.055	0.002	Supported
H_8	EM → PHAB	0.235	0.088	3.538	0.000	Supported
H_9	GWCP → TEGB	0.141	0.062	2.243	0.025	Supported
H_{10}	EC → TEGB	0.153	0.068	2.522	0.012	Supported

Abbreviations: EATT=environmental attitudes; SN=subjective norms; PBC=perceived behavioral controls; EM=employee motivations; PHAB=pro-environmental habits; GWCP=green work climate perceptions; EC=environmental concerns; TEGB=task-related EGBs.

Table 6 Results of indirect effects

Hypothesis	Structural path	Std. estimate (β)	95% CI		*p* value	Results
			UL	LL		
H_{11}	SN → EATT → TEGB	0.026	0.062	0.006	0.019	Supported
H_{12}	PHAB → EATT → TEGB	0.029	0.074	0.008	0.016	Supported
H_{13}	EM → PHAB → EATT	0.040	0.077	0.017	0.001	Supported
H_{14}	EM → PHAB → TEGB	0.045	0.104	0.010	0.028	Supported
H_{15}	EM → PHAB → EATT → TEGB	0.009	0.024	0.003	0.009	Supported

Abbreviations: EATT=environmental attitudes; SN=subjective norms; EM=employee motivations; PHAB=pro-environmental habits; TEGB=task-related EGBs; CI=confidence intervals; UL=upper limit; LL=lower limit.