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ORIGINAL SCIENTIFIC PAPER

Influence of Green Transformational Leadership on the Workplace Pro-environment Behavior: A Case Study of a Large Energy Company in Thailand

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ABSTRACT
Today, environmental problems are worsening, greenhouse gas emissions are increasing, and natural resources are depleting. Solving these problems requires the efforts of everyone in the organization. This study aims to analyze the impact of green transformational leadership on pro-environmental behavior in the workplace. Specifically, the main hypothesis is that green transformational leadership positively influences workplace pro-environment behavior. Two other pathways are also proposed. The relationship can be mediated through green mindfulness and green self-efficacy. The method used in this study is a questionnaire, and data were collected from 163 respondents who work for the Electricity Generation Authority of Thailand. An integrated model containing the hypothesized structure was then tested with structural equation modeling. The results showed that green transformational leadership positively impacted workplace pro-environment behaviors and that this relationship was mediated by green mindfulness. However, green self-efficacy did not mediate between green transformational leadership and workplace pro-environment behavior as there was no relationship between self-efficacy and workplace pro-environment behavior. Rather, green self-efficacy influences workplace pro-environment behavior through green mindfulness. The revised model provides some practical implications for corporations that intend to promote workplace pro-environment behavior. First, green transformational leadership serves as an important factor as it has both direct and indirect impacts on workplace pro-environment behavior. Second, green mindfulness is an important mediator for two indirect effects upon workplace pro-environment behavior. These two factors are key in motivating staff members to work environmentally

Keywords: *green transformational leadership, workplace pro-environment behavior, green self-efficacy, green mindfulness*

JEL Classification: M10, M14

INTRODUCTION

Today, environmental protection has become a major concern of many societies in both developing and developed countries. According to the Emissions Gap Report 2022 (UNEP, 2022), little progress has been made towards meeting the temperature goal of the Paris Agreement since the 26th United Nations Conference of the Parties to Climate Change (COP26) in 2021. To achieve this goal in 2030, annual global greenhouse gas emissions must be reduced

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by 45% compared to emissions projected under current policies. Thailand was among the top 10 countries that were most affected by climate change from 2000 to 2019, according to Germanwatch, an environmental NGO. The Prime Minister of Thailand attended COP26 and emphasized that Thailand attaches great importance to solving the problem of climate change. Thus, “going green” becomes inevitable for both individuals and organizations.

The term "going green” involves people making conscious and sustainable choices. Frequently referred to as the three R's (reduce, reuse, and recycle) for the workplace, going green not only helps an organization conserve resources, but also helps create a socially responsible image. In some parts of the world, customers are concerned about how businesses have an impact on the environment, such as their contribution to sustainable production and green consumption (Lin & Niu, 2018; Souri, Sajjadian, Sheikh, & Sana, 2018).

In organizations, green innovation has become a powerful and positive tool due to the increasing preference of customers for environmentally friendly products in the market (Chen & Chang, 2013; Sheu, 2014). This phenomenon arises because the world has experienced issues such as climate change and global warming that are harming human beings. Therefore, in this era, enterprises should strive to promote knowledge and innovations in the green domain. Green transformation leadership becomes a key element of this process.

Still, most companies in Thailand fall behind the global trend of going green. According to a report issued by the Bank of Thailand (BOT, 2022), in 2021, only 16 companies announced their intention to achieve net zero emissions. However, this is about to change, as the same report states that if companies fail to commit to net zero emissions, they may find it harder to raise capital internationally.

Due to the importance of going green and the lack of research in Thailand on how to transition companies to green outcomes, this study aims to fill the gap. Specifically, this study aims to investigate how green transformational leadership, directly and indirectly, influences pro-environmental behavior in the workplace as the latter affects greenhouse gas emissions. Currently, little research on green transformational leadership has been conducted in Thailand, although some studies have been published on transformational leadership and human resource issues (Phungsoonthorn & Charoensukmongkol, 2018; Promchart & Potipiroon, 2020).

Green transformational leadership stems from transformational leadership. Ackoff (1999) defines transformational leadership as a leader who guides, encourages, and facilitates followers to change. Similarly, green transformational leadership provides employees with a clear vision, inspiration and motivation and supports their developmental needs to achieve their goals in a green organizational environment (Chen & Chang, 2013; Mittal & Dhar, 2016). This paper proposes that green transformational leadership can enhance followers' workplace pro-environment behavior in two ways. The first is through green mindfulness, and the second is through green self-efficacy. The results may boost the organization's green profile and help it capture business opportunities (Mittal & Dhar, 2016). The research questions of this paper are then specified as follows:

(1) Does green transformational leadership have a direct effect on workplace pro-environment behavior and an indirect effect through green mindfulness?

(2) Does green transformational leadership have a direct effect on workplace pro-environment behavior and an indirect effect through green self-efficacy?

The structure of the rest of the paper is as follows. The second part, a literature review, will discuss recent literature on green transformational leadership, workplace pro-environmental behaviors, green self-efficacy, and green mindfulness. Hypotheses are then developed. The third part is data and methodology. Here, the samples, measures, data analysis, and results of the structural equation modeling are presented. The fourth part includes the discussion of results and follows the conclusion.

LITERATURE REVIEW

Green transformational leadership

Transformational leaders inspire their followers to strive for performance that exceeds expectations. They instill confidence in their subordinates, improving their inner motivation and outer performance. Transformational leadership has four elements: idealized influence, inspirational motivation, intellectual stimulation, and individual consideration (commonly referred to as the "Four Is"). Idealized influence enables a leader to build respect and trust among team members, to become their role model, and to make followers feel proud to be part of the team. Leaders must have very high standards of ethical conduct. Inspirational motivation is when a leader sees a vision and inspires others by executing and challenging the work of followers. Intellectual stimulation describes how leaders work with followers to find innovative ways to deal with organizational problems. Individualized consideration allows leaders to focus on the needs of their followers and act as a coach or an advisor for their personal achievement and growth.

Green transformational leadership stems from transformational leadership. It motivates employees to acquire new knowledge (Han, Seo, Yoon, & Yoon, 2016; Le & Lei, 2018) and engages them in activities related to green products and process innovation. This will help companies to introduce green products and/or market services (Andriopoulos & Lewis, 2010) and improve their environmental performance (Martinez-Conesa, Soto-Acosta, & Carayannis, 2017). Through inspiration from the leaders, followers work toward environmental goals, strive to generate fresh ideas for the environment (Mittal & Dhar, 2016), and try to attain performance that exceeds expectations.

Previous research has found that green transformational leadership is associated with many green outcomes. Several studies have shown a positive relationship between green transformational leadership and green performance (Chen & Lai, 2014; Gustiah & Nurhayati, 2022; Zafar, Nisar, Shoukat, & Ikram, 2017). Other studies have found that transformational leadership has a positive impact on green creativity or innovation (Li et al., 2020; Singh, Del Giudice, Chierici, & Graziano, 2020; Zhang, Xu, & Wang, 2020). Huang, Ting, and Li (2021) have shown that green transformational leadership of CEOs positively impacted green work engagement and environmentally proactive strategies. Çop, Olorunsola, and Alola (2021) also have reported similar results. Green work engagement and green team resilience are also positively related to green transformational leadership.

Workplace pro-environmental behavior

One of the three types of environmental behavior proposed by Stern (2000) is environmentalism in the private sphere, which is the focus of this paper. Of particular interest to us is behavioral choice (Clayton & Myers, 2015), which involves decisions that are less harmful to nature, such as the three Rs (reduce, reuse, and recycle), buying organic, and taking public transportation. Such behaviors are important because they are performed voluntarily and privately by employees. In general, however, environmental behavior in the workplace helps organizations protect natural resources and the environment (Anderson & Bateman, 2000), as well as promote corporate social responsibility (Jones, 1996).

Recent research has identified some determinants of work pro-environmental behavior. They include the status and power of a leader (Arsanti, Sugiarto, Pasharibu, & Wijayanto, 2021), coworkers' relationships (Videras, Owen, Conover, & Wu, 2012), social norms (Banwo & Du, 2019; Czajkowski, Hanley, & Nyborg, 2017), moral motivation, private costs or efforts (Czajkowski et al., 2017), perceived behavior control, intention to act, and environmental attitude (Banwo and Du 2019).

Green mindfulness

Kabat-Zinn and Hanh (2009) and Bishop et al. (2004) define mindfulness as the awareness of experiences in a non-identifying, unbiased, open, and accepting manner. This definition includes two aspects: awareness and acceptance (Rau & Williams, 2016). Sometimes it also refers to one's ability to respond to change one's focus, or one's willingness to consider alternatives (Chandwani, Agrawal, & Kedia, 2016). Green mindfulness is considered a condition for an individual's awareness of environmental context, knowledge, and information (Blok, 2018). Green mindfulness activities depend on the shared vision of the organization. Without a shared vision, mistrust and doubt can breed, and promoting mindfulness activities can become challenging (Uchihira, 2019). Therefore, leaders who can instill a shared vision among members of an organization are key to building green mindfulness among them.

Geiger, Otto, and Schrader (2018) found that increased mindful awareness of momentary experiences had a positive impact on healthy lifestyles, which in turn had positive effects on ecological behaviour. Amel, Manning, and Scott (2009) also showed that mindfulness is positively associated with sustainable behavior. On the other hand, Arslan et al. (2022) considered green mindfulness as a moderator variable. They have found that green mindfulness moderated the relationship between energy efficiency and green creativity.

Green self-efficacy

According to Schwoerer, May, Hollensbe, and Mencl (2005), general self-efficacy refers to an individual's belief in one's ability to complete different tasks successfully. Similarly, Bandura (1994) believes that self-efficacy is a person's judgment of one's ability to organize and perform certain actions to achieve a certain level of performance. People who are high in self-efficacy tend to be more engaged and persistent (Bandura, Freeman, & Lightsey, 1999; Schunk, 1995). They perform better and are more committed to their goals (Bandura, 1994). They are also confident in their ability to generate new ideas (Hmieleski & Baron, 2008). Green self-efficacy is a specific mechanism related to environmental motivation. It can be referred to as one's belief in organizing and working towards environmental goals.

Green self-efficacy was found to have a positive impact on green buying intentions (Sharma & Dayal, 2016) and pro-environmental behaviour (Abraham, Pane, & Chairiyani, 2015). It also served as a moderator in the relationship between green servant leadership and pro-environment behavior (Faraz, Ahmed, Ying, & Mehmood, 2021). Farooq, Zhang, Talwar, and Dhir (2022) have found that green self-efficacy mediated the relationship between green human resource management and green creativity.

HYPOTHESES DEVELOPMENT

The first hypothesis concerns the relationship between green transformational leadership and workplace pro-environment behaviour. The idealized influence, one of the components of transformational leadership, is likely to be the driving force in this relationship. Idealized influence means the leaders can build trust with followers and make followers become valued team members. Leaders themselves are role models for followers. Previous studies have found that green transformational leadership has a positive impact on social aspects such as green work engagement (Gustiah & Nurhayati, 2022) and green team resilience (Çop et al., 2021). Social norms and relationships are key determinants of workplace pro-environment behaviour (Banwo & Du, 2019; Czajkowski et al., 2017). In addition, by using a focus group, Arsanti et al. (2021) have found that the position, status, and power of a leader positively influence subordinates' pro-environment bheavior. Therefore, the first hypothesis is:

H1: A positive relationship exists between green transformational leadership and workplace pro-environment behavior.

On the other hand, green transformational leadership can also have a positive impact on green mindfulness. Mindfulness is considered to be a condition for an individual's awareness of environmental context and information (Blok, 2018). Furthermore, green mindfulness activities depend on the shared vision of the organization. Here, it is proposed that green transformational leadership can increase followers' environmental awareness through a shared vision initiated by the leader. The inspirational motivation factor of transformational leadership helps to introduce new ideas by conveying inspiration, rational motivation and image (Mumford, 2000). An inspiring vision presents an impressive picture of future goal achievement and motivates followers to achieve the goal (Arendt, 2009). Followers will then be able to view their work in a mindful context (Gioia & Chittipeddi, 1991; Vogus & Sutcliffe, 2012), and contextual awareness is a major component of green mindfulness. Therefore, transformational leadership is likely to have a positive influence on mindfulness (Madsen, Desai, Roberts, & Wong, 2006). Previous studies (Chen & Lai, 2014; Zafar et al., 2017) did find a positive correlation between green transformational leadership and green mindfulness through questionnaire surveys. Accordingly, the following hypothesis is proposed:

H2: A positive relationship exists between green transformational leadership and green mindfulness.

Mindfulness includes five elements: openness to novelty, sensitivity to different contexts, alertness to distinction, orientation to the present moment, and awareness of multiple perspectives (Langer, 2016). These five elements can significantly promote workplace pro-environment behaviors (Langer, 2016). For example, openness to novelty may help employees to adopt new procedures to reduce waste. Other elements, such as attention to new stimuli, sensitive interpretation of different contexts, appreciation for a different perspective, and extended scanning (Fiol and O'Connor, 2003) may be associated with pro-environment behaviors in the workplace. Once followers understand their work in a more important context through different perspectives, they become fully committed to their work, and this engagement benefits environmental behavior in the workplace (Friedman & Förster, 2001). Moreover, mindfulness may enhance employees' problem-solving and communication skills, as well as maintain their concentration. All of these qualities may also contribute to enhancing environmental behavior (Davis, 1993). Therefore, green mindfulness can positively contribute to workplace pro-environment behavior (Friedman & Förster, 2001).

Empirical evidence provides support that mindfulness can lead to certain green outcomes. Geiger et al. (2018) have found an indirect relationship between mindful awareness and ecological behavior. Amel et al. (2009) reported a positive relationship between mindfulness and sustainable behaviour. Thus, the third hypothesis is:

H3: A positive relationship exists between green mindfulness and workplace pro-environment behavior.

Workplace pro-environment behavior depends on employees' ability to take responsibility and support decision-making (Fiol & O'Connor, 2003). Green mindfulness can help reduce the complexity of the decision-making process by focusing on the present moment and awareness of multiple perspectives. Previous research has shown that mindfulness can positively impact creative thinking and learning (Langer, 2016), as it can help build open-mindedness, commitment, and resilience in workplace pro-environment behaviors (Kirkpatrick & Locke, 1996). Therefore, green mindfulness may mediate between green transformational leadership and workplace pro-environment behaviors. In other words, workplace pro-environment behavior is not only directly influenced by green transformational leadership, but also indirectly through green mindfulness as the mediator. The fourth hypothesis is proposed as follows:

H4: Green transformational leadership has an indirect effect on workplace pro-environment behavior through green mindfulness as the mediator.

Next, a positive relationship between green transformational leadership and green self-efficacy is proposed. In general, self-efficacy is referred to as the effectiveness of performing specific behaviors and actions to achieve goals (Chen, Chang, Yeh, & Cheng, 2015). Transformational leaders are good at inspiring others to pursue the vision (Ackoff, 1999). They actively communicate with their followers, trust them, and guide them to achieve their goals. Furthermore, transformational leaders can bring out ideas and trust so followers can successfully overcome challenges (Bass, 1998). Transformational leadership, through positive perceptions and communications, influences followers' self-efficacy (Kirkpatrick and Locke, 1996; Bandura et al., 1999), making them believe in their ability to achieve their goals. Previous studies (Chen & Lai, 2014; Zafar et al., 2017) did find a positive correlation between green transformational leadership and green self-efficacy through questionnaire survey methods. The fifth hypothesis is thus formed as follows:

H5: A positive relationship exists between green transformational leadership and green self-efficacy.

Self-efficacy refers to people's beliefs about their ability to achieve a specified level of performance (Bandura et al., 1999). Individuals who are high in self-efficacy are more engaged, persistent, and committed to achieving their goals (Bandura, 1994; Bandura et al., 1999; Schunk, 1995). They tend to think positively, set effective goals, and regulate themselves skillfully (Bandura et al., 1999; Zimmerman & Bandura, 1994). They are also confident in their ability to create new ideas. Past research has reported a positive relationship between self-efficacy and workplace behavior (Hsiao, Tu, Chang, & Chen, 2011; Kumar & Uzkurt, 2011; Mumford, 2000). Sharma and Dayal (2016) found through a survey method that green self-efficacy is positively correlated with green purchase intentions, which in turn are related to workplace pro-environment behavior. Therefore, the sixth hypothesis is:

H6: A positive relationship exists between green self-efficacy and workplace pro-environment behavior.

By combining H5 and H6, green self-efficacy mediates between green transformational leadership and workplace pro-environment behavior. By sharing vision, inspiring confidence, and building trust with followers, green transformational leadership increases followers' self-efficacy. As followers increase their self-efficacy, they will become more engaged and committed to environmental behaviors in the workplace. A study has found that self-efficacy is positively associated with ethical behavior, such as responsible purchases and dispositions (Song & Kim, 2018). Therefore, the final hypothesis is:

H7: Green transformational leadership has an indirect effect on workplace pro-environment behavior through green self-efficacy as the mediator

All hypotheses are now summarized in Figure 1.

DATA AND METHODOLOGY

Sample collection

The questionnaire was distributed to the employees of the Electricity Authority of Thailand. Respondents evaluated the statements from the questionnaire using the 5-point Likert scale (1-Strongly Disagree; 5 – Strongly Agree). The total sample consists of 163 respondents. An overview of the demographic structure of the respondents is presented in Table 1.

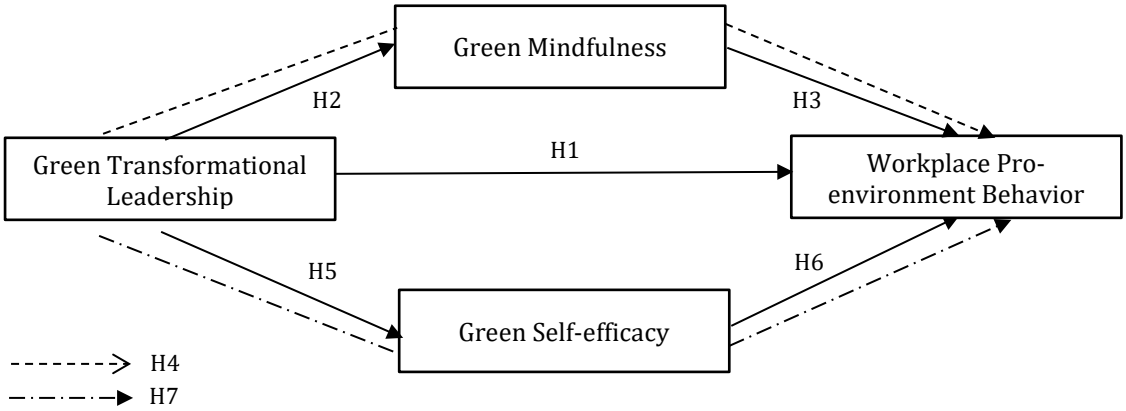

Figure 1: Framework of the Hypotheses

Source: Authors

Table 1. Demographic structure of respondents

		Number of respondents	Percentage of respondents
Gender	Male	81	49.7
	Female	82	50.3
	Total	**163**	**100.0**
Age	Less than 20	6	3.7
	21-30	57	35.0
	31-40	37	22.7
	41-50	27	16.6
	Above 50	36	22.0
	Total	**163**	**100.0**
Education	High school/Diploma	7	4.3
	Bachelor	99	60.7
	Postgraduate	57	35.0
	Total	**163**	**100.0**
Working Experience	Less than 2 years	35	21.5
	More than 2 years	128	78.5
	Total	**163**	**100.0**
Position	Officer	100	61.3
	Senior Manager	47	28.9
	Director	16	9.8
	Total	**163**	**100.0**

Source: Authors

Participants in this study included 163 employees (82 women; 81 men) from the Electricity Authority of Thailand. Their positions ranged from junior officers (100) to senior managers (47) and directors (16). Their education backgrounds include 35% postgraduates, 60% graduates, and the rest own a diploma or high-school qualifications. About 80% of them worked for more than two years, and the rest for less than two years.

Measures

Green transformational leadership

The six-items scale developed by Chen and Chang (2013) was adopted here. A sample question included "the leader of the green innovation project provides a clear environmental

vision for the project members to follow". The measurement for the latent variable of green transformational leadership is:

$$GTL_i = \lambda_{i1} GTL + \delta_{i1} \quad (1)$$

where GTL_i are the six items of measurement (i = 1,...,6) of the latent variable green transformational leadership (GTL), λ_{i1} are the factor loadings and δ_{i1} are the errors of measurement.

Workplace pro-environment behavior

Three items of the daily task-related pro-environment behavior from Bissing-Olson, Iyer, Fielding, and Zacher (2013) were used. An example is, "Today, I fulfilled responsibilities specified in my job description in environmental protection at work." The measurement for the latent variable of workplace pro-environment behavior is:

$$WPB_i = \lambda_{i4} WPB + \varepsilon_{i4} \quad (2)$$

where WPB_i are the three items of measurement (i = 1,...,3) of the latent variable workplace pro-environment behavior (WPB), λ_{i4} are the factor loadings, and ε_{i4} are the errors of measurement.

Green mindfulness

Green mindfulness is referred to the scale used by Chen et al. (2015). The scale has five items. A sample question included "the members of the green innovation project feel free to discuss environmental issues and problems". The measurement for the latent variable of green mindfulness is:

$$GM_i = \lambda_{i3} GM + \varepsilon_{i3} \quad (3)$$

where GM_i are the five items of measurement (i = 1,...,5) of the latent variable green mindfulness (GM), λ_{i3} are the factor loadings, and ε_{i3} are the errors of measurement.

Green self-efficacy

This measure is also adopted from Chen et al. (2015). There are six items. A sample item states: "we feel competent to deal effectively with environmental tasks". The measurement for the latent variable of green self-efficacy is:

$$GS_i = \lambda_{i2} GS + \varepsilon_{i2} \quad (4)$$

where GS_i are the six items of measurement (i = 1,...,6) of the latent variable green self-efficacy (GS), λ_{i2} are the factor loadings, and ε_{i2} are the errors of measurement.

Data analysis

Empirical research was conducted by survey method. Reliability analysis was applied to measure the internal consistency between the items of measurement and Cronbach's alpha

coefficient was used. The measurement model combines the four equations (1) – (4) above. The structural model includes the following regressions:

$$WPB = \beta_{43}GM + \beta_{42}GS + \gamma_{41}GTL + \zeta_1$$
$$GS = \gamma_{21}GTL + \zeta_2$$
$$GM = \gamma_{31}GTL + \zeta_3$$

where γ_s and $\beta_s$are regression paths, and ζ_s are residual errors.

Structural equation modeling (using lavaan package in Rstudio v.1.2.1335) was used to analyze both the measurement model and the structure model. Measurement model was evaluated by reliability, discriminant validity and convergent validity. Structural model was evaluated by multiple fitness indicators.

RESULTS AND DISCUSSION

The measurement model

The correlations between the four latent variables and their means and standard deviations are shown in Table 2. Positive correlations were found between all four latent variables.

Table 2. Means, standard deviations and correlations of the latent variables.

Latent Variables	Mean	S.D.	A.	B.	C.
A Green transformational leadership (GTL)	1.626	0.439			
B Workplace pro-environment behaviour (WPB)	1.888	0.584	0.53**		
C Green mindfulness (GM)	1.724	0.443	0.54**	0.54**	
D Green self-efficacy (GS)	1.687	0.485	0.53**	0.45**	0.66**

*Note: ** p < 0.01*

Source: Authors

Table 3 describes the results of the measurement model. All factor loadings of the latent variables are significant. Cronbach's alpha coefficients are all above the minimum requirement of 0.7, which indicates the reliability of the measurements is acceptable. Discriminant and convergent validity are then tested. Discriminant validity was satisfied by comparing the correlations between the latent variables and the square roots of average variance extracted (AVE). The former should be smaller than the latter. Table 2 shows that the AVEs for the constructs ranged from 0.728 to 0.733, greater than all correlations shown in Table 1 (ranging from 0.45 to 0.66). Therefore, discriminant validity is acceptable. Second, the convergent validity was also satisfactory, as the AVEs for all four constructs were higher than 0.5.

Table 3. The items' factor loadings (λ), the reliability, and the average variance extracted (AVE)

Latent Variables	Items	Factor Loading (λ)	Reliability (Cronbach's αlpha)	AVE	$\sqrt{AVE}$
Green transformational leadership (GTL)	GTL1	0.641	0.87	0.535	0.731
	GTL2	0.712 **			
	GTL3	0.747 **			
	GTL4	0.758 **			
	GTL5	0.763 **			
	GTL6	0.738 **			
Workplace pro-environment behavior (WPB)	WPB1	0.650	0.78	0.537	0.733
	WPB2	0.777 **			
	WPB3	0.780 **			
Green mindfulness (GM)	GM1	0.724	0.87	0.533	0.730
	GM2	0.808 **			
	GM3	0.762 **			
	GM4	0.688 **			
	GM5	0.675 **			
	GM6	0.719 **			
Green self-efficacy (GS)	GS1	0.701	0.87	0.530	0.728
	GS2	0.753 **			
	GS3	0.667 **			
	GS4	0.762 **			
	GS5	0.744 **			
	GS6	0.740 **			

Source: Authors

The Structural Model

The structural model was then tested. Table 4 shows the results and Figure 2 shows the path diagram. The overall fitness of the model is acceptable (χ^2 (184) = 324.38, p < .01; *CFI* = 0.917; *RMSEA* = 0.068*; SRMR* = 0.085). The only path that is not significant is the one between green self-efficacy and workplace pro-environment behavior. It means all the hypotheses are supported except the two related to green self-efficacy, namely H6 and H7.

Nonetheless, it is found that the fitness of the model could be improved by making some alterations to the framework. A path to connecting green self-efficacy to green mindfulness was added and the improvement in fitness is significant. (χ^2 (183) = 283.27, p < .01; *CFI* = 0.941; *RMSEA* = 0.058; *SRMR* = 0.051). The revised structural model includes the following regressions:

$$WPB = \beta_{43}GM + \gamma_{41}GTL + \zeta_1$$
$$GS = \gamma_{21}GTL + \zeta_2$$
$$GM = \gamma_{31}GTL + \beta_{32}GS + \zeta_3$$

where γ_s and $\beta_s$are regression paths, and ζ_s are residual errors.

Table 5 shows the results and Figure 3 shows the path diagram of the revised framework. Overall, the revised framework shows that green transformational leadership directly influenced workplace pro-environment behavior. Moreover, it also indirectly influenced the latter through green mindfulness. In addition, green transformational leadership has a direct impact on both green mindfulness and green efficacy.

Table 4. The results of structural equation modeling for the proposed framework

Regression Path	Coefficient	Z-value	Sig value	Standardized Path Estimate
WPB ->				
GM	0.483	3.242	0.001	0.389 **
GS	0.059	0.484	0.628	0.053
GTL	0.550	2.473	0.013	0.368*
GM ->				
GTL	0.813	6.145	0.000	0.676**
GS ->				
GTL	0.897	5.990	0.000	0.666**
Goodness of fit statistics				
Chi-square	χ^2 (184) = 324.38, p < .01			
Comparative Fit Index (CFI)	0.917			
RMSEA	0.068			
SRMR	0.085			

*Note: ** - level of significance 0.01; * - level of significance 0.05*

Source: Authors

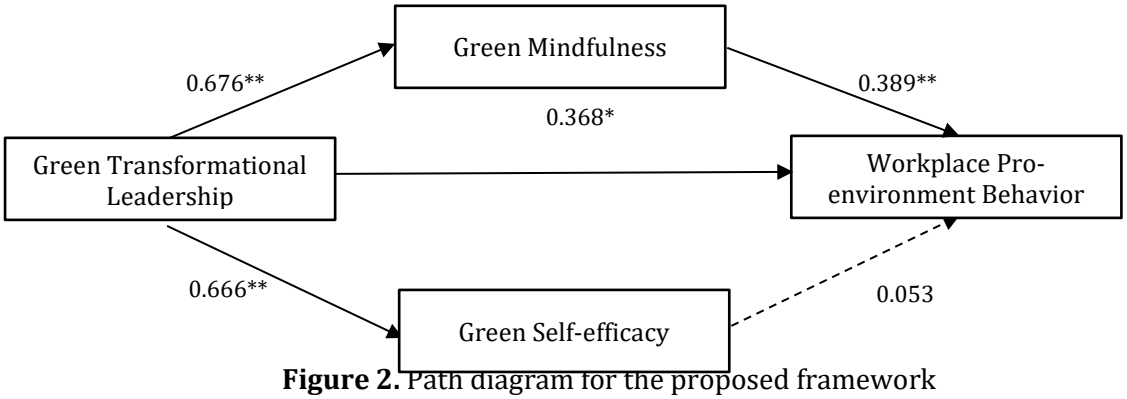

Figure 2. Path diagram for the proposed framework

Source: Authors

Table 5. The results of structural equation modeling for the revised framework

Regression Path	Coefficient	Z-value	Sig value	Standardized Path Estimate
WPB ->				
GM	0.550	3.874	0.000	0.444 **
GTL	0.547	3.244	0.001	0.367**
GM ->				
GS	0.543	5.531	0.000	0.605**
GTL	0.305	2.750	0.006	0.254**
GS ->				
GTL	0.821	5.683	0.000	0.614**
Goodness of fit statistics				
Chi-square	χ^2 (184) = 283.27, p < .01			
Comparative Fit Index (CFI)	0.941			
RMSEA	0.058			
SRMR	0.051			

*Note: ** - level of significance 0.01;*

Source: Authors

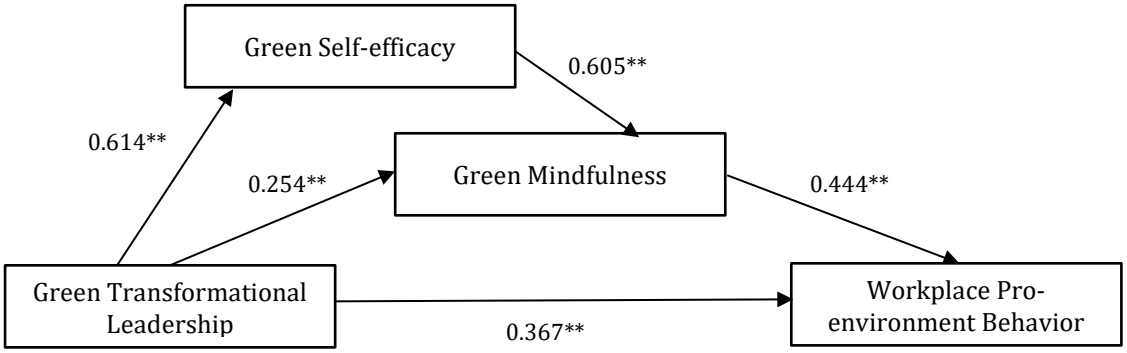

Figure 3. Path diagram for the revised framework

Source: Authors

Discussion

Regarding the first research question on whether transformational leadership has a direct effect on workplace pro-environment behavior and an indirect effect through green mindfulness, the results are affirmative. For the second question, the results did not support the indirect effect of self-efficacy. Rather, their relationship is more complex. There is no direct relationship between green self-efficacy and workplace pro-environment behavior. The only effect on green self-efficacy is that it is positively related to green mindfulness.

According to the results, green transformational leadership is a pivotal factor in influencing workplace pro-environment behavior. Green transformation leadership not only had a direct impact on the latter but also indirectly through green mindfulness. It is a surprise that green self-efficacy is not significantly related to workplace pro-environment behavior. Conversely, green self-efficacy directly affected green mindfulness, which in turn affected workplace pro-environment behavior positively. In other words, green self-efficacy has an indirect relationship with workplace pro-environment through green mindfulness as the mediator. In fact, this finding is quite plausible. Without mindfulness, even individuals with high green self-efficacy may not be aware of whether their actions are pro-environment or not. Nonetheless, this relationship suggests that awareness and acceptance of the environment also depend on beliefs about one's own ability to deal with green-related issues

In summary, the findings suggest that green transformational leaders can influence followers' workplace pro-environment behavior through different pathways. First, green transformational leadership has a direct and positive impact on workplace pro-environment behavior. This is probably due to the idealizing influence of transformational leadership. Leaders serve as role models for others to follow. Second, green transformational leaders can also indirectly influence work pro-environment behavior by raising employees' green awareness. Green mindfulness may be enhanced due to the inspiring motivation and intellectual stimulation of transformational leaders. Here, leaders constantly challenge followers and constantly work with them. Third, green transformational leaders act as advisors to help followers grow, thereby increasing their green self-efficacy, which further strengthens their green mindfulness.

Practical implications

First, the findings suggest that green transformational leadership does have a direct and indirect impact on individuals' workplace pro-environment behavior. This means that green transformational leaders are able to motivate followers to adopt green behaviors at work, including actions to reduce, reuse and recycle. As noted in the revised framework, green mindfulness is also another key factor in green behavior at work. If the individual is more aware

of the issue or embraces environmental protection, then the individual's work will be more pro-environment. Since green mindfulness is also related to the shared vision of the organization, an approach that clearly communicates the vision is recommended. Therefore, if organizations want to motivate their employees to work green, they should first consider the feasibility of green transformational leadership. Second, they should also contemplate the enhancement of green mindfulness among staff.

CONCLUSION

This study supports the argument that green transformational leadership directly and indirectly affects workplace pro-environment behavior, whereas the indirect effect comes from green mindfulness. On the other hand, contrary to the initial predictions, green self-efficacy did not serve such a mediating role. In fact, green self-efficacy and workplace pro-environment behavior have no direct relationship. Rather, the relationship is mediated through green mindfulness. This highlights the importance of green mindfulness in workplace pro-environment behavior. In other words, an individual's behavior will be pro-environment only when the individual is mindful of the environment. Overall, this study shows that green transformational leadership and green mindfulness are two critical forces in contributing to workplace pro-environment behavior.

A limitation of this study is that the sample was limited to one organization in Thailand. Nonetheless, it contributes to the literature as research on green transformational leadership in Thailand is rare. In addition, companies in Thailand are under pressure to engage in environmental activities to secure overseas capital. This study could serve as a starting point for future research. Future research should try to extend similar research to other industries in Thailand or other countries that are also adversely affected by climate change. In addition, other aspects such as green job participation, green creativity, and green performance should also be considered in future research.

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