

# The mediating role of green perceived organizational support in the relationship between green transformational leadership and green self-efficacy

Burcu Özgül and İlknur Demir

## Abstract

**Purpose** – This study aims to reveal whether green perceived organizational support has a mediating role in the relationship between managers' green transformational leadership and the green self-efficacy beliefs of employees.

**Design/methodology/approach** – The textile industry is a sector with fast and cheap production and is the second most damaging sector to the environment due to excessive consumption and rapidly changing fashion trends. Hence, textile industry employees were selected as the research object. The data were collected by survey method from 274 people working in businesses operating in the textile sector in Türkiye. The collected data were analyzed in the SmartPLS 4 analysis program.

**Findings** – The analysis found that managers' green transformational leadership increases employees' green self-efficacy beliefs. Likewise, it was determined that managers' green transformational leadership increases employees' green perceived organizational support. The analysis also indicated that employees' green perceived organizational support increases employees' green self-efficacy beliefs. Finally, as a result of the analysis, it was concluded that green perceived organizational support is a complementary partial mediator variable in the relationship between managers' green transformational leadership and employees' green self-efficacy beliefs.

**Originality/value** – The available literature has overlooked the mediating role of green perceived organizational support in the relationship between managers' green transformational leadership and the green self-efficacy beliefs of employees. This work makes new contributions to the literature and practice by revealing the significance of managers' green transformational leadership and green perceived organizational support in increasing employees' green self-efficacy beliefs.

**Keywords** Green transformational leadership, Green self-efficacy, Green perceived organizational support, Textile industry, Social exchange theory, SmartPLS

**Paper type** Research paper

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## 1. Introduction

The deteriorating ecological environment, environmental regulations, raising social awareness of environmental protection and cost disadvantages amid fierce competition require enterprises to operate in a sustainable way to protect the environment and resources (Zhou *et al.*, 2022). Considering the damage to the environment, the textile industry is the second sector in the world where the most chemicals are used and which releases a large amount of chemical waste to nature (Martínez-Martínez *et al.*, 2023). Türkiye is the fourth largest country in the world with a share of 3.8% in the textile, ready-to-wear and fashion design sectors. On the other hand, it is the second-largest supplier country in Europe. In addition, Türkiye has a 4.8% share in knitted clothing exports and

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ranks fourth among exporting countries. The fashion industry, to which the products produced in these sectors are directed, has a business volume of over \$65bn. The companies involved in the fashion sector in Türkiye are trying to adapt to international standards in this field by making significant investments in the fields of sustainability and recycling to reduce the environmental costs caused by fast fashion (Mangir, 2023). This situation noticed in the textile industry pushes enterprises to adopt business methods that can cause minimal damage to nature (Gbolarumi *et al.*, 2021; Martínez-Martínez *et al.*, 2023). The sustainable development of enterprises is based on the participatory approach of employees. Research has demonstrated that employees constitute an important resource for organizational environmental practices (Buysse and Verbeke, 2003) and that employee behavior is an essential component of the organization's successful environmental activities (Boiral, 2009; Wu and Pagell, 2011). It is also known that employees with high self-efficacy are more likely to voluntarily adopt environmentally friendly goals in the workplace (Tabernerero and Hernández, 2011; Huang, 2013; Kim *et al.*, 2016). Therefore, the question of how to improve employees' green self-efficacy (GSE), which is one of the cognitive factors shaping pro-environmental behavior, is important. Literature on GSE is a newly developing field. Investigating how to improve the GSE of employees in the textile industry can contribute to the literature and practice.

Different leadership styles easily impact individuals' self-efficacy beliefs (Ren and Chadee, 2017; Fuchs *et al.*, 2019). Likewise, it is stressed in the literature that employees' GSE is impacted by managers' environmental beliefs and attitudes (Steg, 2010). Chen and Chang (2013) defined green transformational leadership (GTL) as a leadership style that provides followers with a clear vision, inspiration and motivation and also meets their developmental needs to achieve the environmental goals of the enterprise. According to the social cognitive theory, managers can positively develop employees' GSE beliefs by exhibiting a GTL style, setting applicable goals, clarifying standards, developing a collaborative culture, connecting individuals' actions to results and providing more frequent positive feedback (Chen *et al.*, 2014; Zhang *et al.*, 2020). A few empirical studies have shown that GTL positively impacts GSE beliefs (Chen *et al.*, 2014; Nisar *et al.*, 2017; Zhang *et al.*, 2020). Therefore, the question:

*RQ1.* Does the GTL of managers in the textile industry affect employees' GSE beliefs?

Is the first research question of the current study.

On the contrary, green perceived organizational support (GPOS), a specific type of organizational support, has started to draw attention in the green management literature. GPOS represents employees' perceptions of the extent to which the organization values their sustainability efforts (Zhou *et al.*, 2022). Although some researchers in the literature indicate a positive correlation between GTL and GPOS, empirical studies are very limited (Khan *et al.*, 2021; Hameed *et al.*, 2022; Aboramadan *et al.*, 2022; Tang *et al.*, 2022). When green transformational leaders make their employees feel that they trust them in environmental issues and believe in their contributions to sustainability, employees can perceive green organizational support. Hence, the question:

*RQ1.* Does the GTL of textile industry managers affect employees' GPOS?

Is the second research question of this study.

As employees' trust in the organization that their contributions to green practices are appropriately recognized by the organization improves, in other words, as their GPOS increases, the GSE beliefs of employees may improve (Hameed *et al.*, 2022). According to the reciprocity norm of the social exchange theory, GPOS, as a business resource, can promote the development of employees' personal resources (GSE) (Eisenberger *et al.*, 2020). Furthermore, according to the social cognitive theory, GPOS, which is regarded as a fundamental antecedent of cognitive, motivational and emotional processes, can shape

employees' GSE beliefs. However, there is no research in the green organizational behavior literature examining the relationship between GPOS and GSE. In addition, a study by [Zhou et al. \(2022\)](#) determined that the serial mediation effect of GPOS and GSE was significant in the relationship between responsible leadership and employees' pro-environmental behavior. Accordingly, the question:

*RQ3.* Does the GPOS of textile industry employees affect their GSE beliefs?

Is the third research question of the present study.

Finally, based on all these discussions, the present study aimed to determine whether textile industry employees' GPOS has a mediating role in the correlation between managers' GTL styles and employees' GSE beliefs. To this end, the question:

*RQ4.* Does GPOS mediate the relationship between managers' GTL and employees' GSE?

Is the last research question of this study, integrating the social exchange theory and social cognitive theory.

In the present study, data were collected by a survey method from employees working in enterprises that have the ISO 14001 certificate and operate in the textile sector to test the four research questions. The data were analyzed using the SmartPLS 4 analysis program. In the textile industry, the second sector that pollutes the world, investigating the mediating effect of GPOS on the relationship between the top management's GTL and employees' GSE beliefs can make new, significant contributions to both theory and practice.

## 2. Theoretical framework and hypothesis development

### 2.1 Green transformational leadership and green self-efficacy

GSE is described as the belief in people's ability to organize and execute the action plans needed to achieve environmental goals. Empirical studies have confirmed that GSE has an important role in the development of green creativity ([Chen et al., 2015](#); [Aeknarajindawat and Jermittiparsert, 2019](#); [Khan et al., 2022](#); [Farooq et al., 2022](#)), green performance ([Chen et al., 2014](#); [Nisar et al., 2017](#)) and pro-environmental behaviors ([Ahuja et al., 2023](#); [Mughal et al., 2022](#); [Nisar et al., 2022](#)). When the green organizational behavior literature is reviewed, a lack of research on the antecedents of GSE is remarkable. In accordance with the social cognitive theory, self-efficacy means a person's belief in one's ability to execute and organize the action process ([Bandura, 1991](#)). According to the aforesaid theory, it is assumed that when employees feel often motivated through clear goal-setting, their self-efficacy is likely to improve ([Bandura, 1989](#)). In particular, the social cognitive theory asserts that situational variables impact employees' cognitive abilities ([Gundlach et al., 2003](#)). Self-efficacy has an experiential learning characteristic that can be easily impacted by various leadership styles during the work process of subordinates ([Ren and Chadee, 2017](#); [Fuchs et al., 2019](#)). As indicated by [Haque et al. \(2019\)](#), employees' psychological motivation is impacted by value-oriented leadership practices. On the other hand, [Steg \(2010\)](#) stressed that employees' GSE is impacted by managers' environmental beliefs and attitudes.

Social cognitive theory focuses on change in behavior and the cognitive process that affects change. It is the basic principle of social cognitive theory that people observe the behavior of others and learn by concluding them. According to this theory, an individual can indirectly develop many emotions, such as fear, anxiety, love and hate, by observing others. Therefore, the individual may expect that he/she will also be successful in line with the success of the person he/she takes as a role model (GTL). In addition, according to social cognitive theory, an individual's belief that he will be successful may develop if he receives supportive influence from other individuals (e.g. GTL) that he will be successful ([Bandura, 1991](#)). In line with the assumptions of the social cognitive theory, a green transformational

leader clearly communicates a shared vision to create a sense of partnership, explains how to achieve the vision, expresses trust and optimism, communicates norms and beliefs to followers and empowers followers to achieve goals. Such psychological driving force may affect the GSE of followers. Furthermore, this leader can provide sufficient reference and ideal points for his/her followers to help them believe that they can successfully overcome current challenges and successfully engage in work related to their duties (Chen and Chang, 2013). As stated by Shamir *et al.* (2018), a shared vision can positively impact followers' self-efficacy by emphasizing positive perception, expectation of excellent performance and proof of extraordinary abilities to achieve the desired goals. Therefore, a shared green vision of the green transformational leader can improve employees' GSE by communicating the organization's common goals and providing adequate guidance to employees (Ross and Gray, 2006; Chen *et al.*, 2015). Ahuja *et al.* (2023) carried out one of the studies conducted with this assumption, and it was found that environmental leadership positively impacts pro-environmental behaviors, and this relationship is mediated by GSE. Another study with similar findings was performed by Mughal *et al.* (2022), and it was revealed that environmentally specific servant leadership impacts pro-environmental behaviors and GSE plays a mediating role in this relationship. In few empirical studies, GTL appears to positively impact GSE (Chen *et al.*, 2014; Nisar *et al.*, 2017; Zhang *et al.*, 2020).

Consequently, the green transformational leader can positively affect employees' GSE by setting applicable goals, clarifying standards, developing a collaborative culture, connecting individuals' actions to results and providing more frequent positive feedback (Chen *et al.*, 2014; Zhang *et al.*, 2020). Hence, the following hypothesis was developed in the current work based on the social cognitive theory, arguing that managers can improve employees' self-confidence in GSE through their GTL:

- H1. There is a significant positive relationship between managers' GTL and employees' GSE.

## ***2.2 Green transformational leadership and green perceived organizational support***

GPOS, which is described as employees' belief or trust that the organization will value their contributions if they contribute to sustainability activities (Lamm *et al.*, 2015), plays an essential role in ensuring that organizations achieve their environmental sustainability goals (Karatepe and Aga, 2016; Imran and Aldaas, 2020; Zhao and Huang, 2022). GPOS, which is a specific type of organizational support, has begun to draw increasing attention from many researchers due to its direct effect on employees' green behaviors (Hameed *et al.*, 2022; Madani and Najjari, 2022). Furthermore, when the literature is reviewed, it is seen that few studies have addressed GPOS. In their study conducted with data collected from the manufacturing sector in Malaysia, Khan *et al.* (2021) concluded that there is a significant direct correlation between GTL and GPOS. Kusi *et al.* (2021) determined that GTL moderates the relationship between corporate social responsibility and perceived organizational support. Likewise, in their study carried out in Pakistan, Hameed *et al.* (2022) revealed that GTL moderates the relationship between green human resources management and GPOS. The study by Aboramadan *et al.* (2022) revealed that green inclusive leadership positively impacts GPOS. Tang *et al.* (2022) also demonstrated in their study that sustainable transformational leadership impacts the perceived organizational support levels of employees.

The social exchange theory asserts that employees' perceived organizational support will increase if they perceive positive treatment from their supervisors (Rhoades and Eisenberger, 2002). According to Wayne *et al.* (1997), when leaders provide organizational resources, which are regarded as an essential source of perceived organizational support, employees' perceived organizational support improves. When a green transformational leader provides psychological support to employees to deal with "green" issues in an innovative manner (Robertson and Barling, 2013; Kim *et al.*, 2020), it can be stated that employees may regard this autonomy as a supportive mechanism. In addition, the

employee can also regard the behavioral template offered by a green transformational leader as a resource that will decrease uncertainty and bring clarity concerning green issues (Robertson, 2018). In addition, a green transformational leader's gestures to employees to go beyond the job's requirements in connection with environmental issues can also be interpreted as green organizational support (Graves and Sarkis, 2018). More importantly, individualized concern, one of the distinguishing characteristics of a green transformational leader, can be considered a type of organizational support for the environment (Robertson and Barling, 2013; Robertson and Barling, 2017; Kim *et al.*, 2020). Therefore, the supportive behavior that the green transformational leader displays will mean that employees feel approved by their employers. Based on all these studies and the social change theory, the following hypothesis was developed, arguing that there is a significant correlation between managers' GTL and employees' GPOS:

- H2. There is a significant positive relationship between managers' GTL and employees' GPOS.

### ***2.3 Green perceived organizational support and green self-efficacy***

According to the reciprocity norm of the social exchange theory, GPOS originates from employees' belief that they will contribute to sustainability and be rewarded by the organization. The perceived organizational support feelings of employees motivate them to support their organizations in achieving different goals. Furthermore, organizational support perceived by employees directs them to develop positive emotions (Shabbir *et al.*, 2021). Especially a socially responsible organization with environmental values provides employees with a sense of GPOS. Employees think that if they contribute to the environmental efficiency of their organizations, the management will positively evaluate these contributions (Elshaer *et al.*, 2022). As employees perceive that the organization values their contributions and cares about their well-being, they are more likely to be motivated to exhibit better performance and achieve more (Tang *et al.*, 2022).

In accordance with the social exchange theory, when employees feel that green is supported, they will act environmentally friendly and implement voluntary environmental practices (Elshaer *et al.*, 2022). Empirical studies have confirmed that perceived organizational support plays an essential role and has a significant effect in increasing individuals' self-efficacy levels (Luthans *et al.*, 2008; Wang *et al.*, 2018; Nikhil and Arthi, 2018; Yang *et al.*, 2020; Tang *et al.*, 2022). Nevertheless, no study investigating the relationship between GPOS and GSE has been found in the green organizational behavior literature. Moreover, a study from China empirically supported the serial mediating role of GPOS and GSE in the correlation between responsible leadership and employees' pro-environmental behaviors (Zhou *et al.*, 2022).

GPOS can direct employees to develop GSE as they develop trust in the organization that the green activities they have carried out are appropriately recognized by the organization (Hameed *et al.*, 2022). Based on the lens of the social exchange theory, employees can develop their personal resources (GSE) to fulfill their job demands in the face of GPOS, described as an organizational job resource (Eisenberger *et al.*, 2020). On the other hand, this situation is even more consistent with the social cognitive theory since GPOS can be assumed to be the fundamental antecedent of cognitive, motivational and emotional processes to shape employees' GSE beliefs (Bandura, 1989). Accordingly, the following hypothesis was developed in this study in line with the assumptions of the social exchange theory and social cognitive theory:

- H3. There is a significant positive relationship between GPOS and employees' GSE.

### ***2.4 The mediating role of green perceived organizational support***

There is no research in the literature examining the mediating effect of perceived green organizational support on the relationship between GTL and GSE. As discussed in hypothesis

*H1*, green transformational leaders' communication with employees and their guidance can promote the GSE of employees (Chen *et al.*, 2014; Nisar *et al.*, 2017; Zhang *et al.*, 2020; Farooq *et al.*, 2022). On the contrary, as discussed in hypothesis *H2*, the help and attention provided by green transformational leaders to employees in environmental practices may increase the GPOS of employees (Robertson and Barling, 2013; Robertson and Barling, 2017; Kim *et al.*, 2020). Moreover, as discussed in hypothesis *H3*, GPOS may promote employees' GSE since it increases employees' beliefs that their organization values their achievement of organizational goals (Suifan *et al.*, 2018).

By communicating with employees, green transformational leaders monitor their needs and challenges, help mobilize their potential, persuade them to overcome the current challenges and, thus, increase their GSE. Moreover, green transformational leaders promote knowledge sharing, provide a platform for stakeholder consultation and communication and facilitate knowledge sharing among environmental stakeholders (Voegtlin *et al.*, 2012; Doh and Quigley, 2014). The above-mentioned knowledge-sharing process can allow employees to acquire the necessary environmental knowledge, skills and abilities, which help increase their GSE. These leaders also attach importance to coaching and training employees on environmental protection and sustainable development, reward "pioneers of environmental protection" and can improve GPOS, helping them develop a broader understanding of corporate responsibility in society (Maak and Pless, 2006).

As employees accept that their organizations provide them with the GPOS and recognition they need, along with green transformational leaders who value their contributions and care about their well-being, this recognition creates a sense of obligation in employees to care about their work by improving their GSE to help the organization achieve its goals in the most creative manner (Rhoades and Eisenberger, 2002). As a result, it is assumed that as green transformational leaders succeed in promoting GPOS, employees will tend to improve their GSE to increase the green performance of their organizations. Hence, the following hypothesis is proposed under the assumptions of the social exchange theory and social cognitive theory:

- H4*. GPOS partially mediates the relationship between managers' GTL and employees' GSE.

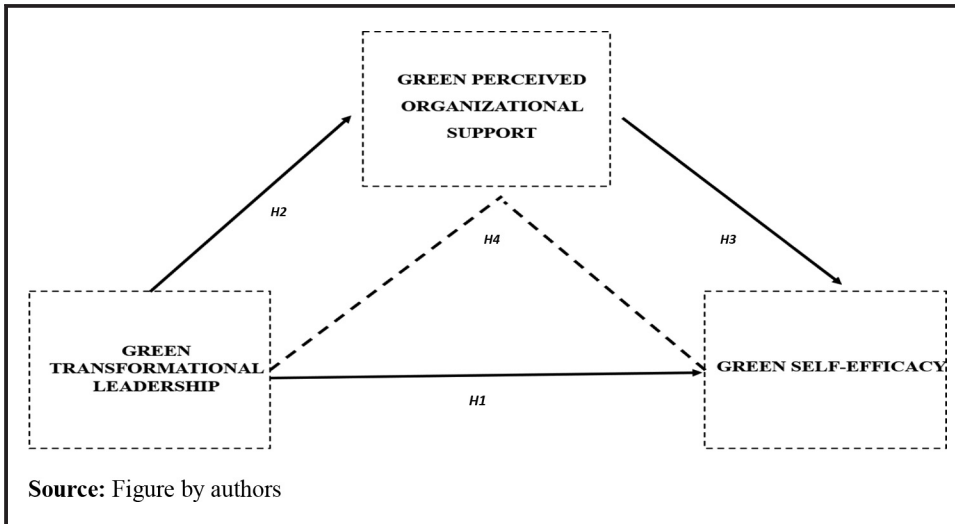
Figure 1 shows the research model.

### 3. Research

#### 3.1 Population and sample of the study

The present study was conducted by collecting data using a survey method from employees working in the environmental departments of small- and medium-sized enterprises with the ISO 14001 certificate operating in the textile industry in Türkiye. There are 4,027 textile enterprises registered with the Istanbul Chamber of Industry and employing fewer than 250 people. In total, 500 textile enterprises were determined using a random sampling procedure from enterprises with the ISO 14001 certificate. The research data were collected between February 2023 and June 2023. The necessary information about the study's purpose was provided to these enterprises, and they were invited to take part in the research. E-mail addresses were acquired from the enterprises that agreed to answer the survey, and links were sent to these addresses via Google Forms. A survey form was sent to 500 enterprises, and 292 participants answered the survey, 274 of which were usable, representing an effective response rate of 54.8%. According to researchers, a sample should be more than 10 times the path arrows directed toward the endogenous constructs (Hair *et al.*, 2019). Accordingly, this model must contain at least 30 samples; however, the sample of the study is 274, which is much higher and meets the criteria. The current study used procedural and statistical methods to reduce concerns about common method bias (CMB) (Podsakoff *et al.*, 2003). As a procedural method, participants were

**Figure 1** Research model



assured that the data collected were confidential and would be used for research purposes only. In this study, Harman’s single-factor test was applied primarily as a statistical technique. As a result of the test, it was revealed that a single factor explained 34.16% of the total variance. Secondly, a single-factor test was conducted using confirmatory factor analysis as a statistical technique. The fit of the single-factor model is poor. Therefore, CMB does not cause serious concern.

Data analysis was conducted on 274 usable data. Table 1 presents the distribution of the demographic characteristics of the employees of the environmental departments who participated in the study. As seen in Table 1, 72.26% of the participants were male, and 27.74% were female. Concerning the age range, 18.25% of the participants were in the 20–30 age range, 26.28% were in the 31–40 age range and 55.47% were in the 41–50 age range. In addition, it can be said that 52.55% of the participants had a bachelor’s degree. Considering

**Table 1** Demographic data

Demographic	Frequency	%
<i>Gender</i>		
Male	198	72.26
Female	74	27.74
<i>Age</i>		
20–30	50	18.25
31–40	72	26.28
41–50	152	55.47
<i>Experience</i>		
1–5	61	22.26
6–10	99	36.13
11–20	114	41.61
<i>Education</i>		
Degree	144	52.55
Master’s degree	78	28.47
Doctorate	52	18.98
Total	274	100

**Source:** Table by authors

the work experiences of the participants, 41.61% of the participants had 11–20 years of experience. Upon examining the sectors where the survey respondents work, 27% work in the garment subindustry, 26.6% work in the yarn industry, 24.5% work in the fabric industry, 13.1% work in the knitting/weaving industry and 8.8% work in the dyeing/finishing industry.

### **3.2 Data collection tools**

The first section of the prepared survey includes questions about the sector where the participants work and the size of the enterprise. In the second section, a six-item GTL scale developed by [Chen and Chang \(2013\)](#) by adapting it from the study by [Podsakoff et al. \(1996\)](#) was used for GTL. The six-item scale developed by [Chen et al. \(2014\)](#) for GSE was used in the third section. To assess GPOS in the fourth section, the four-item perceived green organizational support scale developed by [Hameed et al. \(2022\)](#), by referring to the study by [Eisenberger et al. \(1986\)](#), was used. The survey items in this study were measured through “seven-point Likert scale ratings from 1 to 7,” ranging from “strongly disagree” to “strongly agree.” All measurement items are listed in the [Appendix](#).

### **3.3 Data analysis and findings**

Partial least squares structural equation modeling (PLS-SEM) techniques were used to examine the data collected in the present study with SmartPLS 4. SmartPLS represents a nonparametric technique that uses explained variance in latent dimensions that cannot be directly observed. Furthermore, SmartPLS is considered appropriate for the analysis of complex research models and suggested as an estimation framework that includes relevant theories and empirical data. The main reason for using the Smart PLS 4 analysis program in this study is that it is possible to perform analyses with small samples using the bootstrapping method and does not require normality (nonparametric) assumptions. In SmartPLS, analyses are conducted with a two-stage approach. The suggested theoretical model begins with first testing the convergent and discriminant validity of the external model (measurement model). Second, the internal model (structural model) is evaluated for hypothesis testing.

*3.3.1 Evaluation of the measurement model.* As proposed by [Hair et al. \(2019\)](#), the current study used various statistics to compute the reliability and validity of the external (measurement) model. There are “composite reliability,” “Cronbach’s alpha,” “convergent validity” and “discriminant validity” among these statistics. The first step in reflective measurement model assessment involves examining the indicator loadings. Loadings above 0.708 are recommended, as they indicate that the construct explains more than 50% of the indicator’s variance, thus providing acceptable item reliability ([Hair et al., 2019](#)). First, upon evaluating the factor loadings of the indicators belonging to each construct, since GSE5 indicator of the GSE variable was below 0.708, the indicator in question was excluded from the analysis, and the analysis was repeated. Consequently, the fact that the “factor loading” values of each of the indicators are higher than 0.708 provides evidence that the constructs used in the research have a satisfactory level of reliability (see [Table 2](#)). Second, as seen in [Table 2](#), Cronbach’s alpha values vary between 0.904 and 0.962, and composite reliability values vary between 0.929 and 0.970, which indicates that the scale has acceptable internal reliability ([Hair et al., 2019](#)). Third, it was assessed whether the average variance explained (AVE) values were above 0.50. This value is above the minimum acceptability level, which is regarded as adequate convergent validity. Hence, convergent validity was achieved.

Afterward, three main criteria were used in the current study to verify that the scale had sufficient discriminant validity, as recommended by [Leguina \(2015\)](#). The above-mentioned criteria include the “Fornell-Larcker criterion,” “heterotrait-monotrait ratio” (HTMT) and “cross-loading criterion.” As seen in [Table 3](#), the square root of the AVE values shown in



**Table 2** Results of the measurement model

<i>Constructs</i>	<i>Items</i>	<i>Factor loadings</i>	<i>p-values</i>	<i>Cronbach's alpha</i>	<i>Rho-A</i>	<i>Composite reliability</i>	<i>AVE</i>
Green perceived organizational support (GPOS)	GPOS1	0.930	0.000	0.944	0.945	0.960	0.856
	GPOS2	0.933	0.000				
	GPOS3	0.910	0.000				
	GPOS4	0.927	0.000				
Green transformational leadership (GTL)	GTL1	0.910	0.000	0.962	0.963	0.970	0.842
	GTL2	0.916	0.000				
	GTL3	0.932	0.000				
	GTL4	0.912	0.000				
	GTL5	0.928	0.000				
	GTL6	0.907	0.000				
Green self-efficacy (GSE)	GSE1	0.843	0.000	0.904	0.909	0.929	0.724
	GSE2	0.834	0.000				
	GSE3	0.863	0.000				
	GSE4	0.910	0.000				
	GSE6	0.802	0.000				

Source: Table by authors

**Table 3** Fornell–Larcker criterion

<i>Constructs</i>	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>
GPOS	5,561	1,380	<i>0.925</i>		
GTL	5,349	1,440	0.857	<i>0.918</i>	
GSE	5,589	1,267	0.804	0.812	<i>0.851</i>

Note: Italic diagonal values represent the square of AVE

Source: Table by authors

bold is higher than the correlation coefficient between the variables, which is an indicator of high discriminant validity (Hair *et al.*, 2021).

Second, HTMT values should be below 0.90, as specified by Leguina (2015). The HTMT values of the present study are lower than the reference value (see Table 4).

Finally, as seen in Table 5, to guarantee discriminant validity, the external loading (shown in bold) of each latent unobserved variable should be higher than the cross-loading (together with other measures). This satisfies the desired criterion. When considered together, previous findings confirm and support the reliability, discriminant and convergent validity of the scale, as confirmed in the measurement model of this study.

Afterward, the resampling method (bootstrap) was followed to test whether the indicators of each construct were loaded significantly on the variable to which they belonged. Analysis was conducted with 5000 resamples. The T values in Figure 2 demonstrate that the indicators are significantly loaded on the construct they belong to. Accordingly, the structural model should be evaluated to test the hypotheses of the study.

**Table 4** Heterotrait–monotrait (HTMT) ratio

<i>Constructs</i>	<i>1</i>	<i>2</i>	<i>3</i>
GPOS			
GTL	0.899		
GSE	0.868	0.869	

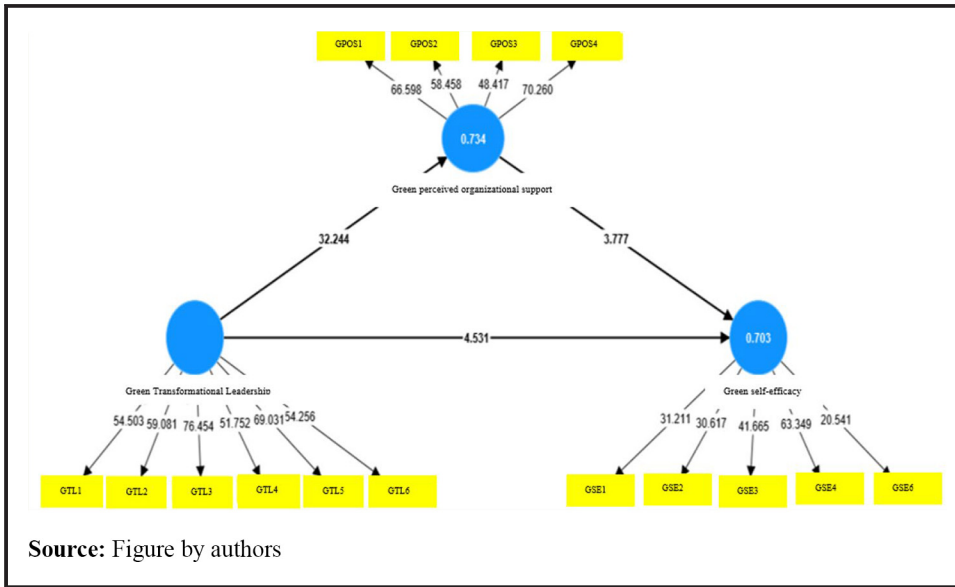
Source: Table by authors

**Table 5** Cross-loadings

<i>Items</i>	<i>GPOS</i>	<i>GTL</i>	<i>GSE</i>
GPOS1	<i>0.930</i>	0.709	0.753
GPOS2	<i>0.933</i>	0.787	0.779
GPOS3	<i>0.910</i>	0.756	0.712
GPOS4	<i>0.927</i>	0.718	0.729
GTL1	0.799	<i>0.910</i>	0.745
GTL2	0.767	<i>0.916</i>	0.741
GTL3	0.794	<i>0.932</i>	0.750
GTL4	0.764	<i>0.912</i>	0.765
GTL5	0.701	<i>0.928</i>	0.736
GTL6	0.792	<i>0.907</i>	0.733
GSE1	0.685	0.701	<i>0.843</i>
GSE2	0.629	0.679	<i>0.834</i>
GSE3	0.678	0.710	<i>0.863</i>
GSE4	0.772	0.754	<i>0.910</i>
GSE6	0.648	0.603	<i>0.802</i>

Source: Table by authors

**Figure 2** Results of the structural model



*3.3.2 Evaluation of the structural model.* Structural equation research was used to test the hypotheses proposed in the current study. First, variance inflation factor (VIF) values are checked to assess whether there is a collinearity problem in the proposed model. Hair *et al.* (2019) suggest that the VIF value should be lower than 5. As seen in Table 6, VIF values are lower than the desired threshold value of 5.

Specifically, the main objective is to investigate the model's ability ( $R^2$ ) to explain and predict the change in endogenous variables caused by the exogenous variable (Hair *et al.*, 2021). Moreover, Chin (1998) suggested that the  $R^2$  value should be at least 0.10 to ensure a satisfactory model fit. Accordingly, the  $R^2$  value of "GPOS" among the endogenous variables is 0.734, and the  $R^2$  value of "GSE" is 0.703 (see Figure 2). Both  $R^2$  values exceed the recommended threshold score, and it can be stated that the study model adequately represents the collected data (see Table 6). Finally, to guarantee a good model fit to the data, the standardized root mean square (SRMR) value should be below 0.08, and the normed fit index (NFI) value should be above 0.90 (Hair *et al.*, 2021). The SRMR and the NFI values of this model are 0.039 and 0.909, respectively, and they exceed the recommended threshold value.

Afterward, a bootstrapping method (5,000 resamples) was applied to determine the path coefficient and its associated T-value for both direct and mediating relationships. The research results demonstrate that the direct impact of GTL on GSE is positive and significant ( $\beta = 0.463$ ,  $t = 4.531$ ,  $p = 0.000$ ). Hence, hypothesis *H1* was supported. Furthermore, the results revealed that the direct impact of GTL on GPOS was positive and significant ( $\beta = 0.857$ ,  $T = 32.244$ ,  $p = 0.000$ ). Therefore, hypothesis *H2* was supported. The findings also show that GPOS has a significant positive impact on GSE ( $\beta = 0.407$ ,  $T = 3.777$ ,  $p = 0.000$ ). According to the aforesaid result, *H3* was supported.

In the current study, the mediation procedure applied in SmartPLS was followed to determine the mediating role of GPOS (Zhao *et al.*, 2010). According to Table 7, the mediating role of GPOS in the correlation between GTL and GSE is significant in the positive direction ( $\beta = 0.349$ ;  $t = 3.656$ ;  $p = 0.000$ ), which confirms the mediating role of GPOS. Nevertheless, when the direct impact between GTL and GSE is evaluated to identify the type of the aforesaid mediating role, the said relationship is observed to be significant.

**Table 6** Hypothesis testing

Path coefficients	Coef ( $\beta$ )	SD	T-values	p-values	Adj. R <sup>2</sup>	F <sup>2</sup>	VIF	Confidence interval bias corrected		Conclusion
								Lower Level	Upper Lower	
GTL→GPOS	0.857	0.027	32.244	0.000	0.734	2.765	1.000	0.791	0.900	H2 Supported
GPOS→GSE	0.407	0.108	3.777	0.000	0.703	0.148	3.765	0.179	0.604	H3 Supported
GTL→GSE	0.463	0.102	4.531	0.000		0.192	3.765	0.273	0.673	H1 Supported

Source: Table by authors

**Table 7** Mediation analysis

Path COEFFICIENTS	Coef ( $\beta$ )	SD	T-values	p-values	Confidence interval bias corrected		Conclusion
					Lower level	Upper lower	
GTL $\rightarrow$ GPOS $\rightarrow$ GSE	0.349	0.095	3.656	0.000	0.152	0.526	H4 supported complementary partial mediation
GTL $\rightarrow$ GSE	0.463	0.102	4.531	0.000	0.273	0.673	

Source: Table by authors

Therefore, GPOS has a complementary, partial mediating role. Hence, hypothesis *H4* was accepted.

## 4. Discussion and conclusions

### 4.1 Research findings

Advancing technology has brought about environmental pollution by disrupting the ecological balance. In a world where natural resources decrease every day and pollution rates increase, the obligation of enterprises to adopt new policies to protect the environment gradually increases. The increased awareness of the environment and human health has impacted the textile industry along with all branches of the industry. Previous research on climate change and sustainability has demonstrated the essential role of GSE in promoting active solution-seeking and positive behavioral intentions, such as pro-environmental behaviors (Abraham *et al.*, 2015). The subject of this study is to investigate how to develop GSE (Chen *et al.*, 2014), which is considered as individuals' beliefs in their ability to systematize and implement green plans required to achieve environmental goals. In this respect, the current study integrated the social cognitive theory and the social exchange theory and proposed the mediating role of GPOS in the relationship between managers' GTL and employees' GSE by testing it with the data from the textile industry.

First, the findings demonstrate that managers' GTL improves the GSE of employees. In this case, hypothesis *H1* was confirmed. The aforesaid result supports the limited number of studies in the literature (Chen *et al.*, 2014; Nisar *et al.*, 2017; Tang and Peng, 2020; Zhang *et al.*, 2020). Hence, green transformational leaders who motivate and inspire their employees to achieve pro-environment goals, put forward a shared green vision, set successful environmental policies and provide positive feedback can increase the GSE of employees. Moreover, green transformational leaders can support the development of their employees' GSE by setting realistic goals and creating a collaborative culture.

In line with the second finding of the research, managers' GTL increases employees' GPOS, and hypothesis *H2* was supported. This result contributes to the literature and practice by empirically supporting previous studies, implying a positive correlation between GTL and GPOS (Khan *et al.*, 2021; Kusi *et al.*, 2021; Hameed *et al.*, 2022; Aboramadan *et al.*, 2022; Tang *et al.*, 2022). Managers who have a GTL style represent green organizations. Thus, employees interpret supportive behaviors as if they are approved by their manager (Eisenberger *et al.*, 2020; Robertson and Barling, 2015). Such managers signal to employees that they care about the environment and provide resources to contribute to green performance (Lamm *et al.*, 2015).

The third finding of the research indicates a positive correlation between GPOS and GSE. Hence, hypothesis *H3* was supported. No study examining the relationship between GPOS and GSE has been found in the green organizational behavior literature. However, the above-mentioned finding is consistent with the results of studies confirming that perceived organizational support plays an essential role and has a significant effect in increasing the

level of individuals' self-efficacy (Luthans *et al.*, 2008; Wang *et al.*, 2018; Nikhil and Arthi, 2018; Yang *et al.*, 2020; Tang *et al.*, 2022). The current study, which fills this gap in the green organizational behavior literature, contributes both to theory and practice. The employee's perception that his/her organization follows and supports green practices may emerge as a factor increasing GSE.

According to the fourth finding of the study, it is understood that GPOS mediates the relationship between GTL and GSE, and hypothesis *H4* was confirmed. There is no study in the literature addressing this relationship. Nevertheless, the mediating role of GPOS is observed in the relationship of green elements with each other in various studies. A study by Hameed *et al.* (2022) found that GPOS mediates the correlation between green human resources management and green creativity. A study by Kusi *et al.* (2021) revealed that perceived organizational support plays a competitive, partial mediating role in the relationship between corporate social responsibility and organizational performance. With the inspiring motivation and support of green transformational leaders provided to their employees, the GPOS of employees increases, supporting the improvement of GSE. GPOS in green organizations motivates employees, enabling them to develop their personal resources (GSE) to enhance their productivity and performance.

#### ***4.2 Theoretical contributions***

There are various theoretical implications in this study. First, the present study strengthens the assumptions of the social cognitive theory by demonstrating that the green transformational leader shapes employees' GSE beliefs by impacting their cognitive and motivational processes and emotional states. Second, the current study supports the assumptions of the social exchange theory by showing that managers' adoption of GTL behavior, gestures to exceed job requirements in connection with environmental issues, and positive treatments such as green-related psychological support will enhance the GPOS of employees. Third, this study strengthens the assumptions of the reciprocity norm of the social exchange theory by demonstrating that when employees perceive green organizational support, described as an organizational job resource, they can improve their GSE, which is described as a personal resource, to fulfill the job demands expected of them. On the other hand, the above-mentioned finding supports the assumptions of the social cognitive theory by indicating that GPOS is a key antecedent of cognitive and motivational processes to shape the GSE beliefs of employees. Finally, the current research integrates the social cognitive theory and the social exchange theory, thus making a new contribution to the green organizational behavior literature by verifying the mediating role of GPOS in the relationship between managers' GTL and employees' GSE.

#### ***4.3 Managerial implications***

The current work has practical implications for managers of green enterprises with the ISO 14001 certificate. The first finding of this study shows that managers should consider using the GTL style to motivate their employees to improve GSE. For example, leaders can provide individualized support to create a trusting, open and supportive environment where GSE is promoted. In line with the second finding of the study, considering the impact of GTL on promoting GPOS, leaders may display behaviors signaling openness and support, such as listening to the individual needs of employees. Furthermore, it can be recommended that enterprises train their current leaders and raise green transformational leaders. For instance, enterprises can clarify leaders' roles and behaviors by creating specific task rules and organizing courses on management responsibility awareness to train and develop green transformational leaders. Moreover, when choosing their managers, enterprises can choose those who are more likely to become green transformational leaders by evaluating their values, abilities, sense of responsibility and environmental awareness. The third finding of the study stresses the significance of GPOS among employees since it encourages them

to improve GSE. Enterprises should consider that when the environmental contributions of their employees are valued, it will create appropriate conditions to encourage them to improve their GSE. Therefore, the current research encourages organizations to open the door to green contributions and feedback from employees and exhibit a certain level of appreciation for such contributions. According to the fourth finding of the study, GPOS has a partial mediating role in the relationship between managers' GTL and employees' GSE. Therefore, managers can benefit from an environmental management system providing employees with resources, evaluation, feedback, coaching, recruitment, training and development. Furthermore, it may be recommended to support and understand employees through diverse human resources practices. Enterprises can enhance the GSE of employees through green recruiting, targeted job training and team building.

#### 4.4 Limitations and future research

This work has both strengths and limitations. Cross-sectional primary data from enterprises that operate in the textile industry were used in this study. The results cannot be generalized to other sectors. Hence, it may be recommended that future researchers replicate the model in various countries and sectors to increase the generalizability of the findings. This research used a relatively small sample, although adequate for PLS-SEM analysis. Analysis can be conducted using larger samples in future research. The findings from the present study are similar to other findings in the existing literature, and the importance of GTL for meeting needs as a new leadership style should be considered, and it may be suggested that future researchers should address GPOS, which is the subject of few studies. In addition, future researchers can evaluate the mediating role of green mindfulness (GM) in the relationship between GTL and GSE, as well as investigate the serial mediation effect of GPOS and GM in the relationship between GTL and GSE. Thus, researchers can examine a conceptual model that can offer strong theoretical and managerial implications.

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## Appendix. Measurement items

### 1. *Green transformational leadership*

- GTL1: Our top management inspires the organization's members with environmental plans.
- GTL2: Our top management provides a clear environmental vision for the organization's members to follow.
- GTL3: Our top management gets the organization's members to work together for the same environmental goals.
- GTL4: Our top management encourages the organization's members to reach environmental goals.
- GTL5: Our top management acts by taking into account the environmental beliefs of the organization's members.
- GTL6: Our top management stimulates the organization's members to think about green ideas.

### 2. *Green self-efficacy*

- GSE1: We feel we can succeed in accomplishing environmental ideas.
- GSE2: We can achieve most of the environmental goals.
- GSE3: We feel competent to deal effectively with environmental tasks.
- GSE4: We can perform effectively on environmental missions.
- GSE5: We can overcome environmental problems.
- GSE6: We could find out creative solutions to environmental problems.

### 3. *Green perceived organizational support*

- GPOS1: The organization values my contribution to environmental management.
- GPOS2: The organization really cares about my environmental goals and values.
- GPOS3: The organization cares about my opinions on sustainability.
- GPOS4: The organization takes pride in my accomplishments on environmental issues at work.

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