

# The Influence of Taoism on Employee Low-Carbon Behavior in China: The Mediating Role of Perceived Value and Guanxi

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**Purpose:** We established a dual-pathway model in which Taoism at work can shape employee low-carbon behavior via two mediating mechanisms: perceived value as a psychological mediator and guanxi as a social mediator.

**Patients and Methods:** Data were collected from 788 Chinese enterprises employees.

**Results:** Our results confirm the direct positive effect of Taoism on employee low-carbon behavior and the partial mediating effects of perceived value and co-worker guanxi. However, supervisor-subordinate guanxi does not mediate the relationship between Taoism and employee low-carbon behavior.

**Conclusion:** Despite the key role of employee low-carbon behavior, the individual-level antecedent to employees' pro-environmental behavior remains underexplored. This study examines the influence of Taoism (an individual-level cultural value) on employee low-carbon behavior in the Chinese context. Theoretical and managerial implications were discussed.

**Keywords:** Chinese traditional culture, social cognitive theory, employee sustainability, green

## Introduction

With the ever-increasing awareness of how industrial and economic activities are giving rise to environmental degradation and global warming, the sustainable development of enterprises is an issue of widespread concern in management and society as a whole.<sup>1</sup> In 2020, the Chinese government pledged that its carbon emissions would reach zero and it would become carbon neutral by 2060.<sup>2</sup> As such, pro-environmental business activities and employee low-carbon behavior have attracted burgeoning attention from both scholars and practitioners.<sup>3</sup>

Despite considerable progress past studies have made, there are still several research gaps. First, prior literature mainly focused on the organization-level antecedents of low-carbon behavior, such as organizational culture,<sup>4</sup> human resource management,<sup>5</sup> corporate strategy<sup>6</sup> and leadership characteristics.<sup>7</sup> And individual-level antecedent variables of low-carbon behavior, such as employee green passion,<sup>8</sup> self-efficacy.<sup>9</sup> Given this, the study explores employee low-carbon behavior from a cultural perspective.

Although a few studies revealed the role of morality (an important individual-level value) in motivating employees' environmental behavior,<sup>10</sup> the mediating processes between individual values and employee low-carbon behavior remain unclear. This is a significant research gap in that we can by no means build novel theories without a dynamic understanding of the mediating mechanisms which explicate a given relationship.<sup>11,12</sup>

The current study makes three contributions to employee low-carbon behavior literature. First, our study is among the first to identify the role of an *individual*-related antecedent (Taoism) in shaping employee low-carbon behavior. Taoism advocates morality<sup>13</sup> and altruism.<sup>14</sup> Although there is a view that China is not a Confucian country,<sup>15</sup> aspects of Confucianism can be found in some Chinese businesses.<sup>16</sup> Zhong Yong thinking (Confucianism) influence on the mental<sup>17</sup> and trait<sup>18</sup> of Chinese

employees has been confirmed. The same is true of Taoism, which exists in companies such as Alibaba.com.<sup>14</sup> Therefore, current research explores the effect of Taoism on employee low-carbon behavior. This can mark a departure from previous studies on employee low-carbon behavior, which primarily adopted employee-organization fit theory to elucidate the *organization-related* antecedents of employee low-carbon behaviors<sup>19</sup>. Second, our study is based on SCT to illuminate the mediating processes between Taoism and employee low-carbon behavior. Based on SCT, employees' social interactions and cognitive images will work together to impact their behavioral outcomes.<sup>20</sup> We evaluate whether perceived value is a psychological mediator in the relationship between Taoism and employee low-carbon behavior. Identifying novel mediating mechanisms is important because it can tease out a given relationship and build novel theories.<sup>12</sup> Third, we extend the employee low-carbon behavior literature by establishing a dual-pathway model in which guanxi may also partially mediate the link between Taoism at work and employee low-carbon behavior. Our findings lend support to past literature showing that social interactions such as guanxi may shape employee low-carbon behavior.<sup>21</sup>

## Literature Review and Hypothesis Development

### Taoism and Employee Low-Carbon Behavior

The core principle of Lao Tzu's Taoist thought is "Wu Wei", which is understood as governing by doing nothing or noncoercive action.<sup>21</sup> "Taoism follows nature", which is interpreted as meaning that humans are children of nature and that children must respect nature as well as their parents.<sup>22</sup> "The unity of heaven and man" is an important moral norm for people, reminding them to be kind and friendly to nature. If human beings ignore the laws of nature and arbitrarily destroy the harmonious relationship between humans and nature, they will be punished by heaven and earth, which will threaten the survival and development of human beings themselves.<sup>23</sup> Taoism mainly emphasizes the values of non-argument, humility, obedience, and the pursuit of lower status.<sup>13</sup> As a key cultural value in China, Taoism may advocate morality<sup>13</sup> and altruism.<sup>14</sup> Taoism is also deeply rooted in individual's day-to-day lives and can guide individual's environmentally friendly behaviors.<sup>24</sup> Moreover, they found that individuals with religious identities are more willing to engage in public environmental protection behaviors than political participants without religious identities.<sup>25</sup>

Low-carbon behavior derives from corporate social responsibility.<sup>26</sup> Employee low-carbon behavior is an environmental behavior in employees' daily life. Prior research mainly studied organizational citizenship behavior toward the environment, green behavior, and pro-environmental behavior. Organizational citizenship behavior toward the environment is employees engaging in sustainable development as the goal and voluntarily completing environmental behaviors not specified by the company.<sup>27</sup> The pro-environmental behavior research object is mainly tourists.<sup>28,29</sup> Compared with organizational citizenship behavior for the environment, green behavior and pro-environment behavior, low-carbon behavior makes it easier to communicate in theory and practice. Given this, this study believes that Taoism may directly shape employee pro-environmental behavior.

Thus, the following hypothesis is proposed:

H1: Taoism positively affects employee low-carbon behavior.

### Taoism and Perceived Value

Perceived value is defined as the consumer's overall evaluation of the usefulness of a product or service,<sup>30</sup> which is mainly composed of utility and cost,<sup>31</sup> including quality and price.<sup>32</sup> As the internal customer, employees also act as consumers.<sup>33</sup> In this study, we define perceived value as the employee's evaluation of their own company's products in terms of emotional value, functional value, and overall value.<sup>34</sup>

Taoism is the transporter of moral values.<sup>13</sup> In fact, the core principle of Taoism (eg, Taoism follows nature) will motivate employees to follow the Taoist code of conduct.<sup>22</sup> Taoism has influenced Chinese people to experience more natural experiences and self-cultivation, challenging the stereotypes of Chinese people (emphasizing the importance of shopping and gambling in tourism).<sup>35</sup> Culture and personal values influences perceived service quality.<sup>36</sup>

Based on the SCT, individuals' cognitive schemas are significantly influenced by their cultural values.<sup>20</sup> Taoism, as a specific kind of individual-level cultural belief, may trigger environmental reactions. More specifically, employees with Taoist

values are more likely to attach higher perceived values (functional value, overall value, emotional value) to the products or services than others without Taoist values.

Thus, the following hypothesis is proposed:

H2: Taoism positively affects perceived value (a functional value, b overall value, c emotional value).

## Perceived Value and Employee Low-Carbon Behavior

The higher perceived cost reduces environmental behavior (waste separation).<sup>37</sup> Prior literature has shown that the leader's values and the followers' perceived value congruence can produce positive outcomes.<sup>38</sup> The employee's evaluation of the company's products/services implies that this employee conforms to the company's values, such as Taoist values. In this regard, employees are inclined to make actions (employee low-carbon behavior in our study) that are in line with the pro-environmental product/service values. Moreover, environmental transformational leadership has an indirect effect on employee environmental behavior through autonomous motivation,<sup>39</sup> which is a psychological variable similar to perceived value. In effect, pro-environment attitudes have positively mediated the effect of daily emotions on pro-environmental behaviors at work.<sup>40</sup> This is not surprising considering that a mixture of moral and personal norms and self-interest foster pro-environmental behavior; both of these are highly relevant to perceived value.

We posit that when employees perceive that the products or services provided by their own enterprise are of good quality and available at a reasonable price, they are likely to engage in positive behavior towards the environment. This view is consistent with Dieste, Panizzolo, Garza-Reyes, Anosike,<sup>41</sup> which lean practice can improve environmental performance.

According to SCT, psychological factors may mediate the relationship between individuals' values and behaviors. Psychological schemas may act as a means for individuals to influence their behaviors, satisfy personal needs, achieve survival goals, and improve the adaptability.<sup>20</sup>

Thus, the following hypotheses are proposed:

H3: Perceived value (a. functional value, b. overall value, c. emotional value) positively affects employee low-carbon behavior.

H4: Taoism positively affects employee low-carbon behavior through perceived value (a functional value, b overall value, c emotional value), and perceived value (a functional value, b overall value, c emotional value) has a mediating effect.

## Taoism and Guanxi

Guanxi is usually a multi-path process starting with two parties. It is guanxi cultivation (a process).<sup>42</sup> Within a company, the relationship between supervisors and subordinates is a special kind of binary emotional bond, which may promote emotional communication between the connected parties.<sup>43</sup> Therefore, guanxi in the workplace has two aspects: the supervisor-subordinate guanxi, which is considered to be the tolerance and respect of individuals and supervisors, and the co-worker guanxi, which is considered to be daily work cooperation among employees and the exchange of activities after work.<sup>44</sup>

According to SCT, when people believe the environment is controllable on matters of importance to them, they are motivated to fully exercise their personal efficacy, which enhances the likelihood of success.<sup>20</sup> Taoism is manifested in cognition; Taoism is a response to the philosophy of nature; Taoism is a driving force of employees' workplace behaviors.<sup>21</sup> The reason for the aforementioned factors is that Guanxi can act as a social/environmental factor. That is, Taoism emphasizes the combination of human actions and environmental forces and the prospect of compatibility by operating in a dynamic environment.<sup>45</sup> Therefore, Chinese businessmen influenced by Taoism tend to change their strategies according to the momentum in the environment.<sup>46</sup> Prior studies have argued that the key components of Taoism ("Wu Wei" and "Yin Yang") are significantly associated with guanxi.<sup>47</sup> "Wu Wei" is considered as governing by doing nothing or noncoercive action,<sup>21</sup> while "Yin Yang" refers to the Chinese tendency to see everything as a unity of opposites and interconnections.<sup>47</sup>

Thus, the following hypothesis is proposed:

H5: Taoism will positively affect guanxi (co-worker guanxi and supervisor-subordinate guanxi).

## Guanxi and Employee Low-Carbon Behavior

The supervisor-subordinate guanxi affects employees' pluralistic ignorance, which, in turn, influences their pro-environmental behavior within organizations.<sup>48</sup> Employee low-carbon behavior is driven by a mixture of moral and personal norms and self-interest.<sup>27</sup> The moral kind of Taoism has a stronger effect on employee low-carbon behavior. Guanxi acts as an environmental mediator; when employees develop a good relationship with their colleagues and supervisors, they are more likely to develop a high level of organizational commitment,<sup>49</sup> and conduct voluntary green behavior.<sup>19</sup>

According to SCT, individuals' behaviors will be influenced by the social context (eg, close friends, relatives and colleagues) in which they are embedded.<sup>50</sup> To maintain and improve their reputation, company colleagues need to regulate their behavior and strive to achieve their expected goals. These are not necessarily the behaviors specified by the company.<sup>51</sup> In the workplace, employees' guanxi with their co-workers and supervisors may be regarded as social cues, which have a joint effect on employee low-carbon behavior.

Thus, the following hypotheses are proposed:

H6: Guanxi (a co-worker guanxi; b supervisor-subordinate guanxi) will positively affect employee low-carbon behavior.

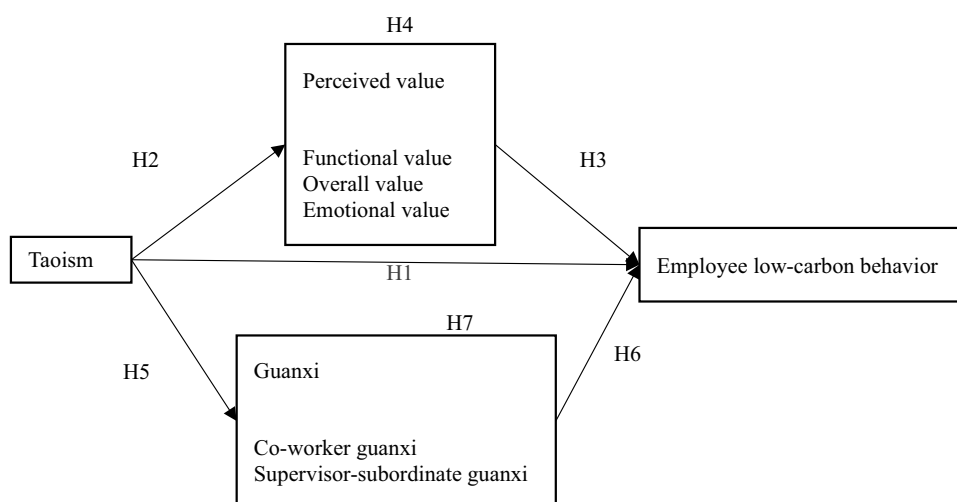
H7: Taoism will positively affect employee low-carbon behavior through guanxi (a co-worker guanxi; b supervisor-subordinate guanxi), and guanxi (a co-worker guanxi; b supervisor-subordinate guanxi) will have a mediating effect.

Based on the above research hypotheses, the framework of this study is shown in [Figure 1](#).

## Materials and Methods

### Sample and Procedures

To test our hypotheses, we collected data from nine private-owned enterprises in the Guangxi Province, China. Using the convenience sampling method, we accessed these enterprises through our personal relationships with the senior managers. The electronic questionnaire was created using the "Questionnaire Star" software. With senior managers' support, the first author distributed electronic questionnaires to the corporate QQ and Wechat groups and encouraged the employee to complete the survey. It is difficult for social science researchers to obtain an accurate sampling frame from one single company.<sup>52</sup> Therefore, this research does not study a specific company but rather an occupation. A cover letter



**Figure 1** Research framework.

that explained this study's research purposes was included on the front page of the survey. Employees who completed the questionnaire had a chance to receive a small gift as a token of gratitude. Most respondents completed the questionnaire at home after working hours. In order to minimize the possibility of bias and social desirability, we ensured full anonymity for all respondents: respondents did not need to provide their personal identification information on the questionnaire. Moreover, management had no access to the completed surveys.

The questionnaires were distributed from November 2019 to December 2019. A total of 788 valid questionnaires were received. The response rate cannot be reported because we cannot calculate the specific number of employees receiving the electronic survey link. The received questionnaires were complete. Among them, the number of female respondents was 436 (55.3%); 466 (59.1%) were between 25 and 31 years old, and 461 (58.5%) of those held an undergraduate level of education.

## Measures

We used a self-report questionnaire to obtain all measures. We performed a back-translation method of the English scales to make them understandable to Chinese participants.<sup>53</sup> The questionnaire was first translated into Chinese by the first author and then translated back into English by the second author to make sure the translation was accurate and reliable. We also asked an English expert who grew up in Taiwan to assess both versions of the questionnaire.

We adopted a five-point Likert-type scale (from "strongly disagree = 1" to "strongly agree = 5") to measure Taoism, perceived value, and guanxi, while using a six-point Likert-type scale (from "strongly disagree = 1" to "strongly agree = 6") to measure employee low-carbon behavior. We varied the number of scale points to mitigate common method bias, see Otterbring, Folwaczny.<sup>54</sup>

**Taoism.** Taoism was measured with the 6-item scale developed by Lin, Ho, Lin.<sup>13</sup> (1) "I am not in a hurry to obtain material benefits (except basic needs) through salary increases or promotion". (2) "I respect the personal differences of my colleagues". (3) "What my boss tells me to do, I will do it and not quarrel". (4) "I do not compete with others". (5) "I don't interfere too much with the work of my colleagues". (6) "I don't like being famous". The Cronbach's alpha coefficient for the scale was 0.67.

**Perceived value.** Perceived value was measured using the 15-item scale developed by Lee, Yoon, Lee.<sup>34</sup> A sample item is "Our company's products are reasonably priced". The Cronbach's alpha coefficient for the scale was 0.76.

**Guanxi.** Guanxi was measured using the 8-item scale developed by Yang, Lau.<sup>44</sup> This scale was divided into two dimensions: co-worker guanxi and supervisor-subordinate guanxi (4 items for each dimension). A sample item is "I participate in company-organized events with colleagues". The Cronbach's alpha coefficient for the scale was 0.76.

**Employee low-carbon behavior.** Employee low-carbon behavior was measured using the 7-item scale from Robertson, Barling.<sup>55</sup> (1) "I try to print on both sides"; (2) "I put compostable things in a compost bin"; (3) "I put recyclable materials (such as cans, paper, bottles, batteries) in a recycling bin"; (4) "I bring reusable utensils (such as travel coffee cups, water bottles, reusable containers, reusable utensils)"; (5) "I turn off the lights when not in use"; (6) "I participate in environmental projects (such as Bike/Walk to Work Day, Pack Your Lunch Day)", and (7) "I make recommendations to managers and/or environmental committees on environmentally friendly practices in an effort to improve the environmental performance of my organization". The Cronbach's alpha coefficient for the scale was 0.82.

**Control variables.** Considering that gender, work position, and education level are related to employee low-carbon behavior,<sup>56</sup> we include them as control variables.

## Results

Because of the large number of parameters, we employed item parceling for each measurement as it can improve variable-to-sample size ratio and reduce model complexity.<sup>57</sup> In effect, the item parceling approach is widely utilized in HRM research, for example, Frenkel, Li, Restubog.<sup>58</sup> Following Wilkinson,<sup>59</sup> we adopted random parceling for all the variables (all measurements were parceled into two parcels). In doing so, we aim to ensure estimation stability and improve scale communality.<sup>59</sup> More specifically, the new items of Taoism were parcel\_1 and parcel\_2, both of which were composed of three items. The new items of functional values of perceived values were parcel\_3 and parcel\_4, both of which were composed of three items. The new items of the overall value of perceived value were parcel\_5 and

parcel\_6, which were composed of three items and two items, respectively. The new items of emotional values of perceived values were parcel\_7 and parcel\_8, both of which were composed of two items. The new items of co-worker guanxi were parcel\_9 and parcel\_10, and the new items of supervisor-subordinate guanxi were parcel\_11 and parcel\_12, all of which were composed of two items. The new items of employee low-carbon behavior were parcel\_13 and parcel\_14, which were composed of four items and three items, respectively.

## Common Method Variance

Following Podsakoff, MacKenzie, Lee, Podsakoff,<sup>60</sup> we adopted two methods to test for common method variance (CMV). First, we deployed Harman's single factor test to diagnose the potential influence of CMV. The result showed that the first factor explains only 29.71% (< 50%) of the total variance, indicating that CMV in our data was limited. Second, we deployed the unmeasured latent method factor technique recommended by Podsakoff, MacKenzie, Lee, Podsakoff.<sup>60</sup> More specifically, we added an unmeasured latent factor to the original measurement model. We allowed all of the measurement items to load onto their theoretical factor and also onto the unmeasured latent factor. We compared our original measurement model and the new latent factor model to see if introducing the unmeasured latent factor would significantly change the model fit. Following Alfes, Truss, Soane, Rees, Gatenby,<sup>61</sup> we tested the change of comparative fit index (CFI) values for both models to check the model fit differences. The change of CFI value for both models was only 0.041, which is less than the rule of thumb of 0.05 (Alfes, Truss, Soane, Rees, Gatenby.<sup>61</sup> To sum up, these results indicate that CMV is not a serious concern in our study.

## Confirmatory Factor Analysis

The confirmatory factor analysis was adopted via AMOS 23 to examine the construct validity. Several scholars have also adopted this approach. For example Zhang, Liu.<sup>62</sup> The hypothesized four-factor CFA yielded an acceptable fit to our data: CMIN = 184.408, df = 56, root mean square error of approximation (RMSEA) = 0.07, Tucker Lewis Index (TLI) = 0.95, Comparative Fit Index (CFI) = 0.96. Alternative models yielded a poorer fit to the data. For example, a three-factor model combining perceived value and guanxi resulted in a poor fit (CMIN=650.353, df=74, RMSEA = 0.10, TLI = 0.89, and CFI = 0.91); as did a two-factor model (CMIN=759.222, df=76, RMSEA = 0.11, TLI = 0.87, and CFI = 0.89). Finally, a single-factor model (Taoism, perceived value, guanxi and employee low-carbon behavior were all loaded onto a single factor) yielded a very poor fit to our data (CMIN=184.408, df=56, RMSEA = 0.11, TLI = 0.86, and CFI = 0.88; see Table 1).

As indicated in Table 2, the composite reliability (CR) value of each variable is higher than the threshold of 0.7.<sup>63,64</sup> The average variance extracted (AVE) values are all greater than 0.5.<sup>64</sup> In addition, the square root of AVE is greater than the inter-construct correlations. To summarize, these results support convergent validity and discriminant validity in our research.

## Descriptive Statistics

Descriptive statistics and correlations among the study variables are presented in Table 3. Taoism is positively and significantly associated with employee low-carbon behavior ( $r = 0.553$ ,  $p < 0.01$ ), functional value ( $r = 0.518$ ,  $p < 0.01$ ), and co-worker guanxi ( $r = 0.496$ ,  $p < 0.01$ ). In addition, co-worker guanxi is positively correlated with employee low-carbon behavior ( $r = 0.577$ ,  $p < 0.01$ ). Functional value is positively related to employee low-carbon behavior ( $r = 0.757$ ,  $p < 0.01$ ). These results are in line with our expectations. The results demonstrate that there is a medium-high degree of

**Table 1** Model Fit Statistics

	CMIN/df	GFI	IFI	TLI	CFI	RMSEA
Single-factor model: T+PR+GX+EGB	10.574	0.854	0.882	0.860	0.882	0.110
Two-factor model: T+PR, GX+EGB	9.990	0.861	0.890	0.869	0.890	0.107
Three-factor model: T, PR+GX, EGB	8.789	0.875	0.908	0.886	0.907	0.099
Hypothesized four-factor model: T, PR, GX, EGB	4.429	0.947	0.961	0.950	0.961	0.066

**Abbreviations:** T, Taoism; PR, perceived value; GX, guanxi; EGB, employee green behavior.



**Table 2** Reliability and Validity Summary

	Items	Factor Loading	CR	AVE
Taoism	Parcel_1	0.934	0.848	0.738
	Parcel_2	0.777		
Functional value	Parcel_3	0.908	0.905	0.827
	Parcel_4	0.911		
Overall value	Parcel_5	0.884	0.859	0.752
	Parcel_6	0.851		
Emotional value	Parcel_7	0.864	0.862	0.758
	Parcel_8	0.877		
Co-worker guanxi	Parcel_9	0.880	0.872	0.773
	Parcel_10	0.879		
Supervisor-subordinate guanxi	Parcel_11	0.905	0.850	0.740
	Parcel_12	0.813		
Employee Low-carbon behavior	Parcel_13	0.926	0.917	0.846
	Parcel_14	0.914		

**Table 3** Descriptive Statistics, Correlation and Discriminant Validity

	Mean	SD	1	2	3	4	5	6	7
1. Taoism	3.600	0.596	0.859						
2. Functional value	3.924	0.618	0.518**	0.909					
3. Overall value	3.894	0.603	0.525**	0.810**	0.867				
4. Emotional value	3.897	0.626	0.504**	0.791**	0.779**	0.871			
5. Co-worker guanxi	3.714	0.663	0.496**	0.624**	0.575**	0.583**	0.879		
6. Supervisor-subordinate guanxi	3.579	0.728	0.395**	0.405**	0.446**	0.444**	0.659**	0.860	
7. Employee Low-carbon behavior	4.708	0.721	0.553**	0.757**	0.726**	0.695**	0.577**	0.407**	0.920

**Notes:** \*\*At the 0.01 level (two-tailed), the correlation is significant. The diagonal is the square root of AVE.

positive correlation between the variables. Hence, we employed the collinearity statistics test to see whether there is a multicollinearity issue. As shown in Table 4, the variance inflation factor (VIF) of all paths is less than 5.<sup>65,66</sup> Therefore, we believe that the multicollinearity problem may not significantly influence our findings.

**Table 4** Summary of Direct Effects

Hypotheses and Path	$\beta$	p	Confidence Intervals Bias Corrected		VIF
			Lower	Upper	
H1: Taoism -> Employee low-carbon behavior	0.179	0.000	0.117	0.249	1.671
H2a: Taoism -> Functional value	0.570	0.000	0.511	0.620	1.000
H2b: Taoism -> Overall value	0.579	0.000	0.525	0.630	1.000
H2c: Taoism -> Emotional value	0.545	0.000	0.481	0.603	1.000
H3a: Functional value -> Employee low-carbon behavior	0.339	0.000	0.241	0.433	3.997
H3b: Overall value -> Employee low-carbon behavior	0.217	0.000	0.136	0.297	3.702
H3c: Emotional value -> Employee low-carbon behavior	0.110	0.031	0.010	0.206	3.288
H5a: Taoism -> Co-worker guanxi	0.515	0.000	0.454	0.569	1.000
H5b: Taoism -> Supervisor-subordinate guanxi	0.410	0.000	0.344	0.473	1.000
H6a: Co-worker guanxi -> Employee low-carbon behavior	0.086	0.022	0.013	0.164	2.425
H6b: Supervisor-subordinate guanxi -> Employee low-carbon behavior	-0.003	0.942	-0.081	0.068	1.827

## Hypothesis Testing

In this study, we examined our hypotheses with structural equation model (SEM), using SmartPLS software. We deployed 5000 bootstraps and a 95% bias-corrected confidence interval to examine the effects.<sup>67</sup>

As shown in Figure 2, in this model, the employee low-carbon behavior adjustment R square is 0.646, illustrating that the employee low-carbon behavior explained variance is 64.6%. The supervisor-subordinate guanxi adjustment R square is 0.167, illustrating that the supervisor-subordinate guanxi explained variance is 16.7%. The co-worker guanxi adjustment R square is 0.265, illustrating that the co-worker guanxi adjustment explained variance is 26.5%. The emotional value adjustment R square is 0.296, indicating the emotional value explained variance is 29.6%. The overall value adjustment R square is 0.334, indicating an overall value variance of 33.4%, and the functional value adjustment R square is 0.324, explaining the variance of 32.4%.

As shown in Table 4, hypotheses H1 proposes that Taoism has a positive effect on employee low-carbon behavior. The effect of Taoism on employee low-carbon behavior has values of 0.179 ( $p < 0.001$ ). Hypotheses H2a, H2b, and H2c propose that Taoism has a positive effect on functional value ( $\beta = 0.570$ ,  $p < 0.001$ ), overall value ( $\beta = 0.579$ ,  $p < 0.001$ ), and emotional value ( $\beta = 0.545$ ,  $p < 0.001$ ), respectively. To sum up, this study found that Taoism positively affects perceived value. Therefore, hypothesis H2 is supported.

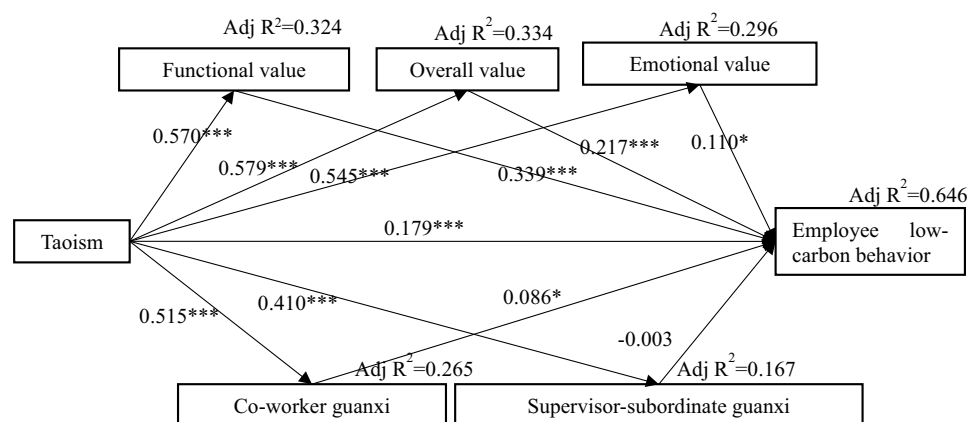
Hypotheses H3a, H3b, and H3c propose that functional, overall, and emotional perceived value have a positive effect on employee low-carbon behavior. The effects of these factors on employee low-carbon behavior have values of 0.339 ( $p < 0.001$ ), 0.217 ( $p < 0.001$ ) and 0.110 ( $p < 0.05$ ), respectively. To sum up, this study concludes that perceived value positively affects employee low-carbon behavior. Hence, hypothesis H3 is supported.

Hypotheses H5a and H5b propose that Taoism has a positive effect on co-worker guanxi ( $\beta = 0.515$ ,  $p < 0.001$ ) and supervisor-subordinate guanxi ( $\beta = 0.410$ ,  $p < 0.001$ ). To sum up, this study concludes that Taoism positively affects guanxi. Therefore, hypothesis H5 is supported.

Hypotheses H6a and H6b propose that co-worker guanxi has a positive effect on employee low-carbon behavior ( $\beta = 0.086$ ,  $p < 0.05$ ). However, supervisor-subordinate guanxi has no negative effect on employee low-carbon behavior ( $\beta = -0.003$ ,  $p > 0.05$ ). Therefore, hypothesis H6 is only partially supported.

As shown in Table 5, hypotheses H4a, H4b, and H4c propose that Taoism positively affects employee low-carbon behavior through functional value, overall value, and emotional value of perceived value, respectively. Its indirect effect value is 0.193 ( $p < 0.001$ ), 0.126 ( $p < 0.001$ ), and 0.060 ( $p < 0.05$ ), respectively. Thus, Taoism positively affects employee low-carbon behavior through perceived value, and hypothesis H4 is supported.

Hypothesis H7a, the indirect effect of Taoism on employee low-carbon behavior through co-worker guanxi, has an indirect effect value of 0.044 ( $p < 0.05$ ). However, in Hypotheses H7b, the indirect effect of Taoism on employee low-carbon behavior



Notes:  $^*p < 0.05$ ;  $^{***}p < 0.001$ .

Figure 2 SmartPLS path.



**Table 5** Summary of Indirect Effects

Effect	Path	Beta	p-value	Confidence Intervals Bias Corrected	
				Lower	Lower
Indirect effects	Taoism -> Functional value -> Employee low-carbon behavior	0.193	0.000	0.130	0.252
	Taoism -> Overall value -> Employee low-carbon behavior	0.126	0.000	0.078	0.175
	Taoism -> Emotional value -> Employee low-carbon behavior	0.060	0.036	0.005	0.118
	Taoism -> Co-worker guanxi -> Employee low-carbon behavior	0.044	0.024	0.007	0.085
	Taoism -> Supervisor-subordinate guanxi -> Employee low-carbon behavior	-0.001	0.943	-0.032	0.029

through supervisor-subordinate guanxi is not significant with an indirect effect value of  $-0.001$  ( $p > 0.05$ ). Therefore, hypothesis H7 is only partially supported.

## Discussion

### Theoretical Implications

This research makes three main contributions. First, our study explains the effect of Taoism on employee low-carbon behavior based on the SCT theory. This can mark a departure from previous studies on employee low-carbon behavior, which primarily adopted employee-organization fit theory to elucidate the *organization*-related antecedents of employee low-carbon behaviors eg.<sup>19,68</sup> Relatedly, our research is among the first to identify the role of *individual*-related antecedent (Taoism) in shaping employee low-carbon behavior. We revealed that Taoism has a positive impact on employee low-carbon behavior. Indeed, as a key cultural value rooted in the traditional Chinese society, Taoism still has a lingering influence on employees' attitudinal and behavioral outcomes in the contemporary workplaces (Zu, 2019). Our research findings add to this line of literature indicating that Taoism acts as a micro-foundation for sustainability, which will enhance employee low-carbon behavior.

Second, our study demonstrated that perceived value mediates the relationship between Taoism and employee low-carbon behavior. Few studies have investigated the mediating mechanisms that link Taoism to employee low-carbon behavior. Our study showed that Taoism facilitates employee low-carbon behavior by improving employees' perceived value to the products or services. This finding lends support to the prevalent belief that Taoism encourages employee pro-environment attitudes and behaviors.<sup>21</sup> Perceived value in this research has three distinct but interrelated components: the functional value, overall value, and emotional value. We found that the higher the functional value, overall value, and sentimental value of the company's products, the higher the employee low-carbon behavior. In fact, perceived value is a similar construct with customer value<sup>69</sup> at least in part because employees are regarded as internal customers of enterprises.<sup>33</sup> As such, our result echoes previous research showing that perceived value can reinforce customer satisfaction, life satisfaction, and pro-environment behavior,<sup>70,71</sup> culture influences perceived service quality.<sup>36</sup> We revealed that the path "Taoism → Emotional value → Employee low-carbon behavior" is not very significant. A plausible interpretation is that the association between Taoism and employee low-carbon behavior may also be direct, without activating employees' emotional values or mindsets. This is consistent with prior research illuminating that green HRM may directly influence employee workplace green behavior.<sup>56</sup>

Third, the current study extends the employee low-carbon behavior literature by establishing a dual-pathway model in which Taoism at work may shape employee low-carbon behavior via two mechanisms. As discussed before, the first one is an attitudinal mechanism (the mediating role of perceived value). Based on SCT, we also offered empirical evidence of the second mediation process between Taoism and employee low-carbon behavior (the mediating role of co-worker guanxi). Our finding is in line with prior studies, such as Taormina and Gao (2010) reporting that Chinese values (eg, Taoism in our study) have a positive influence on guanxi. In addition,<sup>47</sup> eloquently claimed that the vital and indispensable values of Taoism, such as "Wu Wei" and "Yin Yang" may exert strong effect on guanxi. In fact, when employees observe their close friends or colleagues engaging in certain behavior patterns (pro-environmental behaviors in our study), they tend to follow these behaviors in order to build and strengthen their relationships/guanxi.<sup>72</sup> The dual-

pathway model is important in that it can offer a fine-grained understanding of the social (guanxi) and psychological (perceived value) mechanisms whereby Taoism impacts employee pro-environment behavior. It is important to note that in our study, supervisor-subordinate guanxi does not mediate the relationship between Taoism and employee low-carbon behavior as supervisor-subordinate guanxi has no impact on employee low-carbon behavior. This result is consistent with previous research indicating that supervisor-subordinate guanxi might not significantly influence employees' behavior.<sup>73</sup> Previous studies have confirmed that supervisor-subordinate guanxi was positively associated with employee innovation behavior. Therefore, follow-up research can consider the employee green innovation behavior.<sup>74</sup> The divergent roles of co-worker guanxi and supervisor-subordinate guanxi can open up a promising avenue for future studies.

## Practical Implications

Our research provides several practical implications for management. First, our findings reveal that Taoism can promote employee low-carbon behaviors. We suggest that managers should encourage their employees to harmonize themselves with nature and treasure natural simplicity in desires.<sup>21</sup> For instance, training programs may be offered to motivate employees to realize the value of protecting nature. When hiring employees, HR managers ought to evaluate applicants' pro-environmental beliefs. Second, our findings demonstrate that when employees have a high level of co-worker guanxi, they are more likely to engage in green behavior. In order to improve employees' relationships with their co-workers, organizations may establish an employee-friendly workplace and foster a cooperative culture. Third, we found that employee's positive assessment of their company's products or services (high perceived value) could lead to employees' pro-environmental behaviors. This suggests that the organization should provide cost-effective products/services. Indeed, the Chinese government has recently pledged that its carbon emissions would reach zero and become carbon neutral by 2060.<sup>2</sup> Therefore, it is important for organizations to focus on sustainable products that are designed to minimize environmental degradation.

## Limitations and Future Research Direction

We acknowledge that there are several limitations of this research. First, our findings could be inflated because we used the self-evaluation data collected at a single point of time. However, we have deployed a couple of methods (eg, Harman's single factor test and the unmeasured latent factor method) to ensure that common method bias may not invalidate our research findings. Future research, therefore, should use multi-wave (longitudinal) data to identify the cause-effect association. Second, the current research reveals that the Beta values of paths "Taoism -> Emotional value -> Employee low-carbon behavior" and "Taoism -> Co-worker guanxi -> Employee low-carbon behavior" are very low. This indicates that there are several omitted mediators beyond perceived value and guanxi. We, thus, expect future research to identify other mediating variables that are at play between Taoism and employee low-carbon behavior. Third, this quantitative research used existing scales to measure all of the variables. Future research should adopt qualitative methods or a mixed-method approach to capture novel components of Taoism and employee low-carbon behavior. Fourth, there is a wide range of cultures rooted in contemporary Chinese workplaces. In this regard, follow-up studies can focus on other philosophical ideas, such as Mohism<sup>14</sup> or Confucianism<sup>75</sup> to examine the relationship between cultural values and employee low-carbon behavior.

## Conclusion

This study examines the influence of Taoism (an individual-level cultural value) on employee low-carbon behavior in the Chinese context. Our results confirm the direct positive effect of Taoism on employee low-carbon behavior and the partial mediating effects of perceived value and co-worker guanxi. However, supervisor-subordinate guanxi does not mediate the relationship between Taoism and employee low-carbon behavior. These findings have important implications for the psychosocial pathway linking Taoism with low-carbon behavior.

## Data Sharing Statement

Data and other materials related to this research will be provided to qualified researchers on request.

## Ethical Approval

This study was conducted in accordance with the Declaration of Helsinki, and the study has been reviewed and approved by the ethics committee of Guangxi Normal University. All participants read and signed a consent form before they participated in the study.

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