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ORIGINAL RESEARCH

How Green Mindfulness and Green Shared Vision Interact to Influence Green Creative Behavior

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Aim: The study is based on the self-determination theory and aims to investigate the mediating role of green intrinsic motivation and the moderating role of green shared vision in the association between frontline managers' green mindfulness and green creative behavior to leverage their capacity to think creatively and act sustainably.

Methods: The study employs a time-lagged, multi-source research methodology to collect data from frontline managers of service businesses in the tourism and hospitality industry. Data are analyzed using SmartPLS Structural Equation Model to evaluate the structural and measurement models. The authors evaluated the measurement model by employing the criteria of internal consistency: reliability and Cronbach's alpha, validity: convergent and discriminant validity; and the structural model using the path coefficient, coefficient of determination, predictive relevance, and goodness-of-fit metrics.

Results: Our findings indicate that green mindfulness significantly improves frontline managers' green creative behavior. Additionally, green intrinsic motivation mediates the connection between green mindfulness and green creative behavior. In addition, the direct effect of green mindfulness on green intrinsic motivation as well as the indirect effect of green mindfulness on green creative behavior through green intrinsic motivation, are both significantly moderated by green shared vision.

Discussion: To the best of the authors' knowledge, this is one of the few efforts that outstretch the boundary conditions of green mindfulness and green creative behavior through the mediating role of green intrinsic motivation and the moderating role of green shared vision.

Keywords: green mindfulness, green creative behavior, green intrinsic motivation, green shared vision, self-determination theory

Introduction

Management researchers and practitioners are aware of how crucial the tourism and hospitality sector is to the development and preservation of the ecosystem.[1–3] Accordingly, burgeoning pressure on service companies in the tourism and hospitality sectors to integrate green practices into every aspect of their business operations and provide "eco-friendly" products is magnifying.[4] In response to escalating environmental issues, employers view employee creativity, particularly green creativity, as a key factor in developing sustainable goods and services through eco-friendly business practices.[5] In this milieu, employees' green creative behavior (GCB) defined as "the development of new ideas about green products, green services, green processes or green practices that are judged to be original, novel and useful",[6] leverages firms in incorporating green practices into all aspects of business operations.[7]

A massive stream of studies indicates that employees' GCB benefits the tourism and hospitality industry.[4,6,8–14] Nonetheless, only little is known about the antecedents of GCB's.[4] Although organizational sustainability scholars have increasingly casted green creativity in empirical studies, however, majority of prior research has linked employees' GCB from a diversity of the leadership perspectives. For instance, Chen and Chang[6] stressed the role of green transformational leadership and green dynamic capabilities in facilitating employees' green product development performance through

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green creativity. In addition, the eminent role of green transformational leadership in fueling employees' GCB has also been reported in some recent studies.[15–17] In a related stream, Bhutto et al[18] investigated a serial mediation model of green psychological climate and work engagement through the lens of green inclusive leadership. Moreover, a host of researchers in the recent years have also explored the significance of green HRM as a stimulating factor that promotes green creativity.[19–21] Given the crucial role of green creativity in leveraging organizational sustainable development goals, prior researches have explored its contextual factors, with the valuable exception of Kalyar et al[4] who studied individual factors in promoting green creativity. Our study extends the implications of Kalyar et al[4] and outstretches the boundary conditions of GCB by exploring individual as well as contextual factors of GCB.

This study utilizes the self-determination theory (SDT)[22,23] to support the underlying relationships to evaluate the direct influence of GMFN on GCB via the mediating role of GIM and the moderating role of GSV. The study hypothesizes that GMFN acts as a regulatory mechanism to one's awareness, stimulating self-regulated functioning, ie, GIM, which fosters performance outcomes, ie, GCB.

Although it has been postulated that employees' green mindfulness (GMFN) can be linked to GCB, there is a dearth of empirical data to support this corollary. The present study fills this gap by looking into GMFN as a precursor to GCB. According to Chen et al,[8] GMFN refers to "a state of conscious awareness in which individuals are implicitly aware of the context and content of environmental information and knowledge". To advance an individual's practice and experiences, GMFN provides "non-evaluative descriptions" of one's observations, enabling people to objectively explain their surroundings while attending to various stimuli and drawing on their current, in-The-moment experiences.[24] Thus, it is plausible to claim that GMFN leads to innovative and distinctive environmental ideas, stimulating the tourism and hospitality sector to achieve their performance goals.[25] According to this viewpoint, the study expands on mindfulness and asserts that GMFN has a significant relationship with GCB.

This study aims to extend this line of inquiry by examining a previously unexplored causal mechanism that may influence the association between GMFN and GCB: green intrinsic motivation (GIM) – "the motivation that engages in a green behavior that arises from within the individual because it is naturally gratifying to you".[10] Despite burgeoning interest in examining individual characteristics that explain individuals' green behavior,[17,26] studies investigating GIM are scant in the existing literature. Assessing GIM as a causal mechanism may offer opportunities to recognize the locus of causality as an internal factor with the greatest potential to boost GCB activated by GMFN. We build on the SDT to predict the association between GIM and GCB, stimulated by GMFN. It is argued that human motivation is determined by the SDT, which specifies that individuals' have an innate predisposition to extend their capabilities to explore and learn, and to glance over challenges and novelty.[22] The theory further deliberates that individuals' perceptions of autonomy in the task can facilitate the transformation of GIM into GCB. In our study, individuals who draw on GMFN can better position themselves in the predisposition of autonomy, thereby, culminating into GIM and then GCB.

This work extends the boundary conditions of the GMFN-GCB nexus to guide the theoretical reasons relating to this potential indirect influence of GMFN on GCB through the mediating role of GIM. We suggest that the relationship between GMFN and GCB, mediated by GIM, is moderated by green shared vision (GSV). This is in congruence with Kalyar et al[4] recommendations to investigate the boundary effects of the contextual elements in the relationship between GMFN and GCB. In this study, we hypothesize that (1) the relationship between GMFN and GCM is mediated by GIM and (2) GSV moderates the direct association between GMFN and GIM, as well as the indirect relationship between GMFN and GCB, mediated by GIM.

Contributions of the Study

The study presents several meaningful contributions to the extant knowledge on tourism and hospitality industry and related literature. First, tourism and hospitality sectors are facing more than ever stressing pressures from governmental programs and interventions and environmental pressures to enhance their responsiveness towards ecological degradation.[4,18,27,28] Service firms in the tourism industry find it imperative to manifest ecofriendly business activities by cultivating eco-friendly creativity and innovation. However, in order to achieve sustainable competitive advantage, these firms require their talent pipeline to provoke green creativity.[29] Nonetheless, a review of preliminary studies indicates that empirical research concerning the antecedents of GCB, while casting individual as well as contextual

factors is limited. This turns out to be our second contribution that our study seeks to explore GMFN as a cognitive mechanism engenders service employees to translate green creativity through an active awareness and attention towards environment. Third, the study relies on the SDT and proposed that GIM serves a mediating mechanism and facilitates the culmination of GMFN into enhanced GCB.[30] However, the mediating role of GIM between GMFN and GCB is absent in the extant literature. Fourth, in addition to investigating the individual factors leveraging GCB,[31–33] the study outstretches the boundary conditions of GMFN–GCB by investigating the moderating role of GSV in the underlying linkage. To the best of authors' knowledge, no prior studies have investigated the moderating role of GSV into the direct relationship between GMFN and GIM and indirect association between GMFN and GCB via GIM. Last but not the least, by exploring the moderating mediating effects of GSV and GIM, our study provides a more nuanced understanding of the nexus between GMFN and GCB. We further expect the implications of our theorized model, ie, exaggerated GCB stimulated by GMFN will spill over into fostering service firms' sustainable goals in the tourism and hospitality industry.

Guided by the purpose of the study, the study aims to achieve the following research objectives:

- To determine the crucial role of individual's cognitive mechanism (eg, GMFN) in steering their motivation (eg, GIM) to demonstrate eco-friendly behaviors (eg, GCB); and
- To explore the critical role of contextual factor (eg, GSV) as a boundary condition to reinforce the underlying linkages.

The study formulates the following research questions to attain the aforenoted objectives:

RQ1. To what extent does GMFN stimulate service employees' GCB through the mediating role of GIM?

RQ2. How does GSV underpin the underlying associations between GMF and GIM (and GCB)?

The remained of the study presents theoretical underpinning of the hypothesized relationships among the study variables; research methodology followed by elucidating sampling and procedures; empirical analyses and findings; and discussion, implications, and limitations of the study.

Theoretical Framework and Hypotheses

SDT

The SDT[22,23] purports that human behaviors are self-determined or autonomous and that people autonomously direct their behaviors to satiate their three universal basic psychological needs, namely, "need for autonomy", "need for competence", and "need for relatedness". According to the autonomous continuum of this theory, intrinsic motivation or identified regulation, also known as GIM,[22,23] supports people's fundamental needs and guides behavior toward goal achievement, ie, GCB. Individuals can find GIM based on their levels of personal satisfaction by being involved in an eco-friendly job, which harvests innate pleasure of doing the activity; thereby, facilitating GCB. Besides, additional insights are drawn upon the cognitive evaluation component of SDT, which suggests that individual's intrinsic motivation can be regulated through social or environmental factors.[23] The authors corroborated that intrinsic motivation cannot be engendered without autonomy, which is embedded in the volunteer feelings accompanying any act,[22] ie, GCB. However, individuals need relatedness indicating that GIM has the appeal of novelty and challenge and can be facilitated through external environment, ie, GSV. Subsequently, one could focus on exercising and accomplishing creative endeavors to get the satisfaction and pleasure of completing a task. According to Deci and Ryan[22] and Ryan and Deci,[23] both forms of motivation, guided by either intrinsic component or extrinsic factors, complement and reinforce each other. Conclusively, the study anchors on the SDT as an overarching theoretical underpinning to propose that GMFN can promote GCB via GIM through the moderating role of GSV.

GMFN and GCB

Chen and Chang[6] defined GCB as "the development of new ideas about green products, green services, green processes or green practices that are judged to be original, novel and useful". Besides, Khan and Khan[34] sanctioned that GCB represents employees' proactive dialogue with the company and their peers regarding matters of ecology. Subsequently,

opportunities arise through the regular and voluntary exchange of ideas among peers and organizational members, leading to more environmentally friendly behaviour and supporting effective environmental management.[34] Employees that exhibit GCB are more likely to adapt their activities and behaviors to meet environmental demands, inspire their coworkers to do the same and participate actively in the organization's environmental programs and events.[35] Escalating environmental impacts and reducing eco-degradation will help tourism businesses achieve their ecological goals and objectives more robustly.

Prior studies have revealed an important link between creativity and the pursuit of creative activities by people, groups, and organizations.[36–38] In the opinion of Jonassen,[39] "in most organizations where employees are not always given clear guidelines on routine, as well as occasional job matters, employees frequently need to identify problems (which frequently happen in a dynamic and iterative way), encode them and search for the solution, which fits best in the context". Being creative enables people to carry out their responsibilities in specific situations and aids them in utilizing novel and original ideas that may be helpful for problem-solving and task completion.[40] However, in order to overstate their green performance, people must use their particular assets (ie, "mindfulness"), which serve as the cornerstone of green behavior. In this context, recent research has identified GMFN as a personal cognitive resource that encourages a person to react to external cues.[41] According to Barbaro and Pickett,[42] cognitive resources in people automatically cause a variety of daily behaviors; as a result, GMFN leverages self-world connection with the outside world (ie, the green context in the tourism industry), which in turn elicits sustainable environmental behaviors. People who use their distinctive cognitive abilities, ie, G-MFN, are more aware of and responsive to everyday conditions in the present. They are also more inclined to participate in the idea-generation process for environmental management. This is because focusing on finding answers to current issues opens avenues to identifying new issues, iteratively enhancing behaviors that improve environmental sustainability, and inciting GCB.

According to the SDT, employees engage in SDT-based interventions, that is, they engender the necessary cognitive resources in terms of GMFN to enable them to recognize and encode environmental problems, conduct informational searches, and come up with novel and creative solutions to pro-environmental issues. Therefore, GMFN is the recipe for nourishing GCB that will allow tourism and hospitality service companies to increase the environmental impact and reduce eco-degradation[43] by incorporating unique and innovative pro-environmental ideas, processes, and products and services on the foundation of GCB[7,44] This is because people who utilize GMFN are more likely to actively pay attention to and be aware of the most recent environmental information and knowledge, which increases their likelihood of infusing their cognitive demands into idea generation or exploration in an environment-friendly setting. Furthermore, findings from general mindfulness literature imply that mindfulness improves people's capacities for enhancing concentration and attention, elevating interpersonal and communication skills, and fostering decision-making and problem-solving abilities.[10,44] Therefore,

H1: GMFN has a significant positive impact on frontline managers' GCB.

Mediating Role of GIM

The SDT defines intrinsic motivation as a state of love and passion that propels people to complete tasks instead of being affected by rewards or benefits from the outside world.[22] Based on their love, curiosity, and intense interest in the task, people who follow their inner guidance are likelier to feel rewarded, engaged, and thrilled.[45,46] For example, people like activities such as gardening, haggling, and golf.[22] This is because individuals experience intrinsic motivation, happiness, and enjoyment when they do it. According to a related thread, GIM, defined as "the love, passion, or interest for green and pro-environmental behavior that is driven by internal drive or rewards",[47] fuels the passion for green and pro-ecological behavior.[47] Faraz et al[48] assert that GIM is more effective when an individual component is the locus of causality. Because their actions and behaviors are determined by their inner selves, those with greater levels of GIM are less bothered by external stimuli. Besides, employees with higher GIM have a greater propensity to love and care about the environment.[10] We hypothesize that GIM increases their interest in and participation in green activities and inspires pro-environmental behaviors that can address environmental demands and issues in the tourism and hospitality sector.

In this study, we hypothesize that GMFN is a cognitive resource that provokes GIM in an individual. Due to their capacity to monitor their internal and external environments, mindful people do not envisage, fantasize, or worry about

the future.[49] Similarly, according to Creswell,[50] people can become less susceptible to the negative emotions associated with status and disputes, rewards, failure, and other people's opinions by practicing mindfulness, which enables them to witness their experiences without analyzing, assessing, reflecting, or judging others. Further, individuals who practice mindfulness eventually gain the ability to see the bright side of life.[51] Moreover, Brown and Ryan[49] discovered that whereas low levels of mindfulness are negatively correlated with negative affect, high levels of mindfulness are favorably correlated with positive affect. Additionally, mindful people are more likely to pay attention to cues from their fundamental needs and control their behavior in a way that satisfies them,[49] supporting their intrinsic drive.[52] A host of researchers in recent years have documented a favorable association between mindfulness and intrinsic motivation.[52–55] By integrating these analogies, we hypothesize that GMFN promotes GIM among people, which nurtures their pro-environmental endeavors. Therefore,

H2: GMFN has a significant positive impact on GIM.

Combining these aforenoted arguments suggests that GIM plays a mediating role, such that GCB is underpinned by internal motivation or rewards and encourages pro-environmental behavior, largely stimulated by GMFN that nourishes GIM. Numerous preliminary studies have suggested that intrinsic motivation plays a mediating role in the relationships between creativity and environment support,[56] ethical leadership and organizational citizenship behavior,[57] and openness to experience.[58] According to Li et al,[10] GIM promotes love and enthusiasm for the environment because it gives people a sense of autonomy and self-determination, which are essential components of GCB. In a nutshell, GIM provides an explanation that clarifies how GMFN becomes GCB as a result of employees' increased environmental concern. Therefore,

H3: GIM mediates the association between GMFN and GCB.

Moderating Role of GSV

The diversity in the literature's connection between GMFN and GCB shows the possibility of moderators, even though we normally anticipate a positive link between GMFN and GIM (and GCB). Therefore, we expect that GSV will have a moderating influence on the connection between GMFN and GIM (and GCB) Chen et al[8] defined GSV as "a clear and common strategic direction of collective environmental goals and aspirations that members of an organization have internalized". The authors further contemplated that because it offers a collective strategic direction that may guide members' actions toward environmentalism, GSV acts as a catalyst that helps GIM develop.[8] Additionally, it is asserted that a shared vision provides a common 'strategic direction' that can reveal converging objectives. The foundation of the current study is the idea that leveraging green business practices in tourism enterprises can only be accomplished by creating green goals that are shared by the top management and all of the staff members.

Chen et al[8] claim that an organization can use shared vision by making its members aware of its goals and distributing the responsibility for achieving them. Similarly, Afsar et al[32] argued that having a shared vision enables firms to inspire desired behavior in their workforce, ensuring that long-term objectives are attained. But if groups do not communicate their goals, "visions may become purely rhetorical, resulting in disillusionment and distrust instead of inspiration and motivation".[59] More specifically, employees increase their participation in environment-related activities when they believe their organizations are 'society-specific' and 'ecologically accountable'.[8] In addition, Martin et al[60] endorsed that shared vision fosters GIM and improves environmental management competence building. However, studies encapsulating a shared vision of adopting proactive ecological initiatives are relatively limited in the sustainability literature.[61] According to Vogus and Sutcliffe,[61] followers' perceptions of GSV aid in their ability to view their work in a wider and more considerate framework, ultimately inciting GIM. Additionally, GSV cultivates a collective vision that aligns employees' objectives and beliefs with the firm's and gives tasks an urgent purpose, eventually exaggerating their work's intrinsic value.[62] This is founded on the SDT, which asserts that shared vision increases the satisfaction and pleasure that are inherent in the activity by evoking positive emotions like enthusiasm and optimism.[20] Additionally, shared vision gives organizational members direction on what to think and what to alter, allowing workers to tap into their cognitive resource (ie, mindfulness), which they can employ by 'questioning their assumptions, refraining problems, and thinking out of the box'.[59] They are inspired to develop original and imaginative environmental concepts.[4] This is

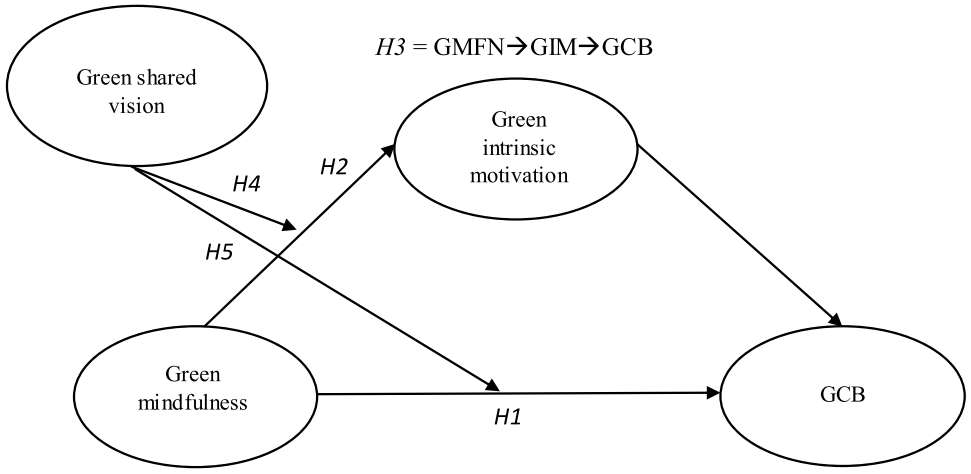

Figure 1 Conceptual model.

because a shared vision encourages employee self-determination and gives them the liberty and freedom to choose how to develop original and cutting-edge ideas for the environment. Therefore,

H4: The relationship between GMFN and GIM is moderated by GSV such that the association is strong (weak) at high (low) levels of GSV.

The combined projections above indicate a moderated mediation model. As was previously argued, GSV mediates the association between GMFN and GIM. Consequently, this engagement, in turn, predicts GCB. We draw upon the SDT,[22,23] which posits that individual's intrinsic motivation can also be regulated by extrinsic factors that facilitate an effective culmination of intrinsic motivation into the desired outcomes. That is to say, when employees perceive that their goals and that of organizational goals have something common in them and are congruent to each other, their motivation to exercise environment-friendly behaviors will increase. Hence, through GSV organizations can nurture a sense of shared vision to be ecologically accountable and society-specific,[8] which in turn, will improve their GIM, subsequently transforming into enhanced GCB. Therefore, we suggest that GSV intervenes in the indirect link between GMFN and GCB, mediated via GIM (Figure 1). Therefore,

H5: The relationship between GMFN and GCB via GIM is moderated by GSV such that the association is strong (weak) at high (low) levels of GSV.

Method

Sample and Method

The study made use of time-lagged ("three-wave"), multi-source ("self-rated and peer-rated") research design to collect data from personnel working in service organizations in the Pakistani tourism and hospitality industry. Due to growing environmental difficulties and increased regulatory demands, the academic and practical interest in tourism and hospitality businesses has recently increased.[2,3] The target respondents, ie, employees in lower, medium, and senior managerial levels, are anticipated to be the genuine representative of the study due to the increased accountability on tourism businesses, particularly in developing nations.[28] The authors chose tourism businesses in the northern regions to collect data for this study. The northern region in Pakistan with its tail extending from the Twin-cities, Islamabad/ Rawalpindi are the hub of tourism in Pakistan. Given the increasing tourists visits in these areas messed with burgeoning environmental issues/concerns, these organizations require more robust and up-to-date arrangements of eco-friendly business activities.[4,28] We selected frontline employees responsible to execute a vast range of services for their customers. The study collected data from the target respondents over six months in waves, each lasting eight weeks from March 2022 to August 2022. This aligns with Maxwell and Cole's[63] recommendations to include a time lag in the research design to gather information identifying causal effects. Furthermore, utilizing a cross-sectional study makes it

challenging to prevent biases in assessing 'parameters in the mediation analysis'.[64] This supports the adoption of a time-lagged research methodology in this study, which is also consistent with several earlier investigations.[65–69]

The authors used a "face-to-face" method of data collection. To do this, a "non-probability, purposive sampling technique" was used to distribute the surveys. This is because it was impossible to access the intended respondents' precise information. Thus, the purposive sampling technique seemed ideal because it might elicit arbitrary responses. The target respondents in the tourism businesses in Pakistan's northern regions were given questionnaires. The authors also offered a cover letter outlining the study's purpose and guaranteed participants' confidentially. The authors handed out 500 questionnaires during wave 1 to gather information on the respondents' GMFN, GSV, and demographic details. Of which, the authors received 443 research questionnaires. Thirteen questions that were discovered to be incorrectly or incompletely filled out throughout the screening procedure were rejected by the authors. To collect data for GIM, the authors gave 430 questionnaires to the respondents during wave 2. The study received 414 fully completed surveys back out of 430. The authors compared the responses from each wave and eliminated nine questionnaires because of missing data. In the third wave, peer-rated responses on the target respondents' GCB were acquired. In order to minimize data nesting, we requested each peer to appraise a maximum of two respondents. Finally, using the keys created by the participants as instructed in the first phase, the authors evaluated and matched all of the responses gathered in each wave. Such that the authors asked the responders to supply their name initials and month of birth.

The study analyzed 405 completed questionnaires and discovered an 81% response rate. The survey had 43% women and 57% men in total, with a mean age of 34.99 years and a standard deviation of 5.67 years. Forty percent and 60% of the workforce held "lower" and "middle" managerial jobs, respectively. According to tenure, 12% of employees have been with their companies for six to twelve months, 20% have been there for one to four years, 26% for four to seven years, 22% have been there for seven to twelve years, and 20% have been there for more than twelve years. Additionally, 57% of respondents were from "private sector firms", and 43% worked for 'public sector organizations'.

Measures

Given that English is utilized as an official language in Pakistan's commercial sector and as a medium of instruction in schools, colleges, and universities, we adopted established scales from earlier studies and distributed them in English. The questionnaires were based on a Likert scale with five possible outcomes, ranging from 1 (strongly disagree) to 5 (strongly agree).

GMFN

The research scale used to measure GMFN was taken from Williams and Seaman's[70] study, consisting of six items with the sample items including "I am encouraged to express different views concerning environmental issues and problems" and "I am inclined to report environmental information and knowledge that have significant consequences".

GSV

The research scale used to measure GSV was taken from Jansen et al[71] study, consisting of four items with the sample items including "there is commonality of environmental goals in the company", and "the company's employees are enthusiastic about the collective environmental mission of the company".

GIM

The research scale used to measure GIM was taken from Amabile et al[72] study, consisting of six items with the sample items including "I enjoy coming up with new green ideas", and "I enjoy tackling with environmental tasks that are completely new".

GCB

The research scale used to measure GCB was taken from Chen and Chang's'[6] study, consisting of six items with the sample items including "This employee suggests new ways to improve environmental goals" and "This employee promotes and champions new green ideas to others".

Control Variables

Individual demographics, such as age, gender, occupation, and tenure, were treated as controlled variables following earlier studies.

Data Analysis

The study employed "partial least square structural equation modeling" (PLS-SEM) using SmartPLS (v 4.0). The authors advocate the usage of PLS-SEM over CB-SEM for the following reasons. First, rather than proving theories, the study aims to evaluate the structural paths' "predictive capability" and "to maximize explained variance in the latent endogenous variables".[73] In addition to calculating the main effects, the study also evaluated the moderator effect of GSV; hence, the study tested a complicated moderated mediation model.[74,75]

Common Method Bias

The study employed different metrics to address the issues pertaining to common method biasness (CMB).[76] The authors first gathered data over several time intervals to improve the measurement estimates used in the analysis. Besides, the study dealt with the CMB issue using self- and peer-rated scales. Further, additional efforts to make sure that the study does not suffer from the CMB concerns, the authors also evaluated Harman's one-factor approach. For the stated cause, the "unrotated solution" and a "factor number" limited to one were used to check the single-factor variance. The test's result of 32.615%, which is less than 50%, indicates no potential CMB issues in this study.[76] Moreover, the study analyzes the multicollinearity assessment using SmartPLS and obtained the values less than 3.3, specifying the study as free from the issues of CMB.[73]

Results

Measurement Model

The study evaluated the "measurement model" by utilizing criteria for "internal consistency", "convergent validity", and "discriminant validity".[73] The study examined "composite reliability" (CR), in addition to "Cronbach's alpha", as advised by Hair et al,[73] to assess "internal consistency". The values of "Cronbach's alpha" and "CR" in Table 1 are greater than the minimum threshold values of 0.6 and 0.7,[73] demonstrating "internal consistency". The authors assessed "outer loadings" and "average variance extracted" AVE using the acceptable minimum level of 0.5 for establishing the "convergent validity".[77] According to the analysis results, all values are over the lowest allowable level, ensuring the study's "convergent validity".

The study also evaluated "discriminant validity", which measures how much a latent variable empirically differs from other latent variables.[73] The study looked at the heterotrait-monotrait (HTMT) ratio and Fornell-Larcker criterion to determine discriminant validity.[73] The square root of the AVE in the construct correlation matrix is shown in Table 2, which reveals the Fornell-Larcker results, indicating that the square root values are larger for the own construct than the associated inter-construct correlations. Additionally, the "bias-corrected and accelerated" (BCa) bootstrapping technique was used to evaluate the HTMT ratio using a resample of 5000 and a one-tailed *t*-test with a 90% significance threshold (to support an error probability of 95%). The HTMT ratio is shown in Table 2, and all values are below the $HTMT_{.85}$ upper limit, establishing the study's discriminant validity.

Structural Model

We also analyzed the "structural model" by determining the path analysis to assess the study's hypotheses. The authors used the bootstrapping method to obtain the relevant *p*- and *t*-values. Besides, we evaluated the structural model using the following criteria, including the "coefficient of determination" (R^2), the "predictive relevance" (Q^2), and the "effect sizes" (f^2). The "predictive capability" of the model is indicated by the "cross-validated redundancy" with values greater than 0. To ensure the model's "predictive accuracy", we also assessed the effect sizes. Table 3 displays the outcomes of the structural model. H1 is supported by the data, which show a significant positive correlation between GMFN and GCB

Table 1 Validity and Reliability for Constructs

	Loadings	AVE	CR	Cronbach's Alpha
Green mindfulness		0.561	0.853	0.826
GMFN1	0.719			
GMFN2	0.832			
GMFN3	0.623			
GMFN4	0.812			
GMFN5	0.742			
GMFN6	0.745			
Green shared vision		0.511	0.878	0.845
GSV1	0.645			
GSV2	0.723			
GSV3	0.753			
GSV4	0.735			
Green intrinsic motivation		0.532	0.890	0.887
GIM1	0.653			
GIM2	0.723			
GIM3	0.723			
GIM4	0.642			
GIM5	0.753			
GIM6	0.864			
Green creative behavior		0.556	0.812	0.778
GCB1	0.753			
GCB2	0.764			
GCB3	0.775			
GCB4	0.772			
GCB5	0.726			
GCB6	0.678			

Abbreviations: GMFN, green mindfulness; GSV, green shared vision; GIM, green intrinsic motivation; GCB, green creative behavior; AVE, average variance extracted; CR, composite reliability.

Table 2 Discriminant Validity

	Fornell-Larcker Criterion				HTMT Criterion			
	GMFN	GSV	GIM	GCB	GMFN	GSV	GIM	GCB
GMFN	0.748							
GSV	0.513	0.714			0.634 $CI_{0.900}$ [0.549;0.714]			
GIM	0.553	0.424	0.729		0.823 $CI_{0.900}$ [0.761;0.885]	0.664 $CI_{0.900}$ [0.615;0.732]		
GCB	0.634	0.652	0.553	0.745	0.495 $CI_{0.900}$ [0.443;0.573]	0.734 $CI_{0.900}$ [0.650;0.795]	0.763 $CI_{0.900}$ [0.716;0.842]	

Abbreviations: GMFN, green mindfulness; GSV, green shared vision; GIM, green intrinsic motivation; GCB, green creative behavior; CI, bootstrapping 90% confidence intervals (n=5000) (one-tailed).

($\beta = 0.449$, $t = 11.251$, $p = 0.000$, $f^2 = 0.262$). Additionally, GMFN significantly influences GIM ($\beta = 0.488$, $t = 10.735$, $p = 0.000$, $f^2 = 0.341$), supporting H2.

Additionally, in accordance with the suggestions made by Hair et al,[73] the study used a two-stage approach to determine the moderating effect. In contrast to an orthogonal or product indicator technique, the two-stage approach "exhibits a high level of statistical power".[74] With a resample of 5000, we used the BCa bootstrapping approach to calculate the moderator effect size. Concerning the empirical results of H4 and H5, Table 3 demonstrates that the

Table 3 Effects on Endogenous Variables

Hypotheses	β	CI (5%, 95%)	SE	*t*-value	*p*-value	Decision	f^2	R^2	Q^2
Age[a]	0.021(n.s.)	(−0.049, 0.043)	0.032	0.523	0.512				
Gender[b]	0.078(n.s.)	(−0.010, 0.121)	0.068	0.653	0.635				
Occupation[c]	0.034(n.s.)	(−0.051, 0.087)	0.022	0.262	0.542				
Tenure[d]	0.074(n.s.)	(−0.012, 0.149)	0.040	0.824	0.642				
H1 GMFN → GCB	0.449***	(0.363, 0.519)	0.080	11.251	0.000	Supported	0.262	0.542	0.343
H2 GMFN → GIM	0.488***	(0.411, 0.568)	0.062	10.735	0.000	Supported	0.341	0.568	0.435
H4 GMFN x GSV → GIM	0.420***	(0.330, 0.499)	0.050	8.525	0.000	Supported	0.267		
H5 GMFN x GSV → GCB	0.374***	(0.280, 0.478)	0.051	4.602	0.001	Supported	0.232		

Notes: ***significance p < 0.05 (1.96); [a,b,c,d]= control variables.
Abbreviations: GMFN, green mindfulness; GSV, green shared vision; GIM, green intrinsic motivation; GCB, green creative behavior.

interaction term (GMFN_GSV) has a significant positive impact on GIM ($\beta = 0.420$, $t = 8.525$, $p = 0.000$, $f^2 = 0.267$), and GCB via GIM ($\beta = 0.374$, $t = 4.602$, $p = 0.001$, $f^2 = 0.232$), with a medium effect size.

Additionally, following Dawson's (2014) suggestion, we used a "simple slope analysis" to visualize the interaction between GMFN_GSV on GIM and GCB via GIM (shown in Figures 2 and 3). The simple slope analyses show that the direct relationship between GMFN and GIM and the indirect relationship between GMFN and GCB, mediated by GIM, is stronger at high levels of GSV than at low levels of GSV.

Additionally, we hypothesized that GIM would play a mediating role in the interaction between GMFN and GCB. We used the mediation approach proposed by Zhao et al[78] to assess the mediation analysis. We obtained point estimates of the indirect effect using the BCa bootstrapping technique and a 5000 resample.[73] According to Table 4, GMFN has a significant total effect on GCB with 95% confidence intervals (0.654, 0.802), and it has a significant indirect effect on GCB through the mediating role of GIM with 95% confidence intervals (0.235, 0.370), suggesting complementing mediation. Besides, we also evaluate "variance accounted for" (VAF) to assess the mediation study. H3 is supported by the VAF value of 39.51%, which shows that GIM partially mediates the link between GMFN and GCB.

Additionally, the study calculated the "goodness-of-fit index" (GFI) – "the geometric mean of the average communality and average R^2", using the diagnostic tool.[65,66] With a value of 0.547 higher than the threshold value of 0.36 for a significant effect size of R^2, the GFI results are displayed in Table 5, indicating a good model fit.[79] In addition, Stone-Geisser's Q^2 was evaluated with an "omission distance" of 5. The analysis resulted in a value that was noticeably higher than 0, demonstrating the model's "predictive relevance".

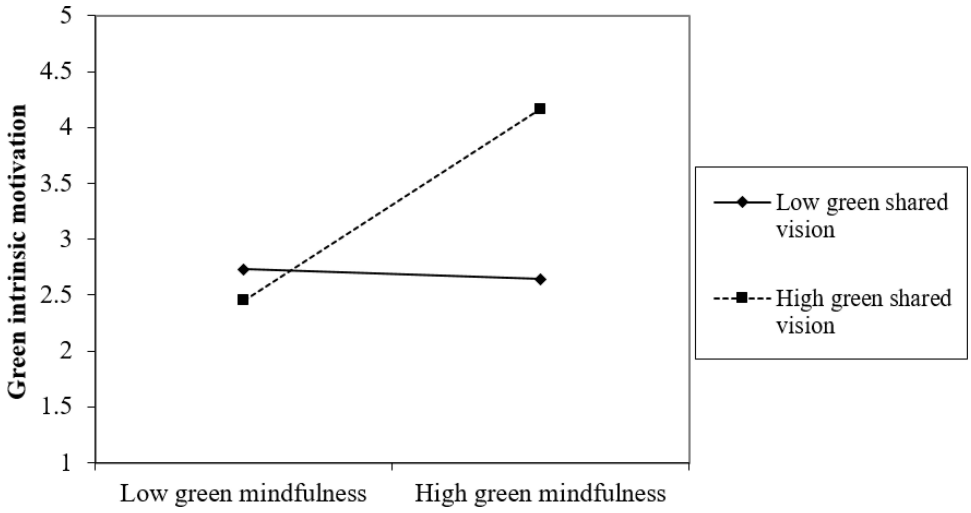

Figure 2 Interaction effect of green mindfulness and green shared vision on green intrinsic motivation.

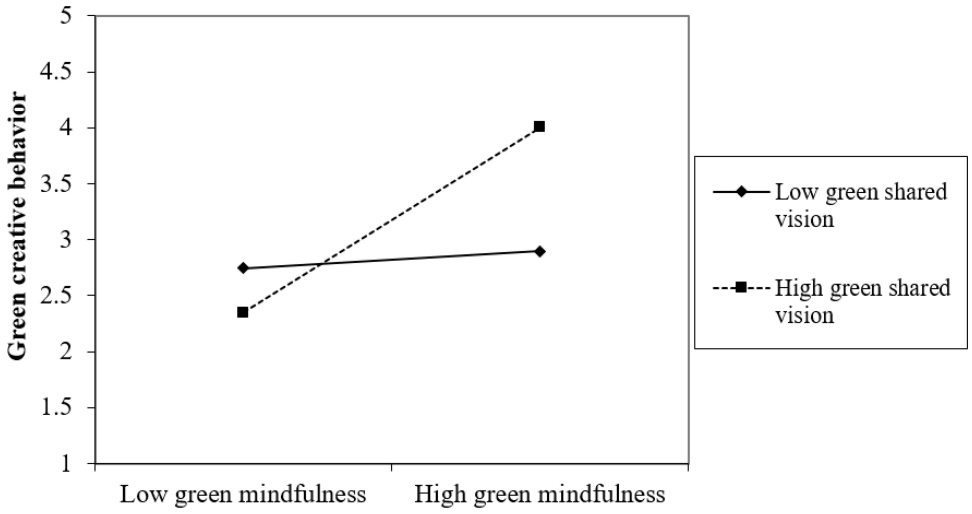

Figure 3 Interaction effect of green mindfulness and green shared vision on GCB.

Discussion

Employee GCB is of utmost importance in providing consumers with excellent services, value, and experiences given the significant contribution of the tourism and hospitality industry to the protection and development of the ecosystem.[4] Therefore, the primary contribution of this study is the theorization and evaluation of a moderated mediation model that results in inflated GCB, which has yet to be examined. The study used the SDT as its foundation and focused on the stated cause to analyze how GMFN affected the elicitation of GCB through the mediating effects of GIM and the moderating effects of GSV. The study used a time-lagged, multi-source research approach to gather information from the tourism and hospitality industry service companies. As expected, the study discovered that environmentally conscious workers are more likely to use original and creative ideas and, as a result, think outside the box when exhibiting environmental behavior. Additionally, the study discovered that individual and contextual factors favorably impact the underlying relationship. The results specifically confirm the postulated associations, such that:

Table 4 Summary of Mediating Effect Tests

	Path	t-value	BCCI		Path	t-value	95% BCCI	Decision	VAF
Total effect GMFN → GCB	0.744	10.322	(0.654, 0.802)	Indirect effect GMFN → GIM → GCB	0.294	8.421	(0.235, 0.370)	Supported	39.51%

Abbreviations: GMFN, green mindfulness; GSV, green shared vision; GIM, green intrinsic motivation; GCB, green creative behavior; VAF, variance accounted for (indirect effect / total effect) total effect: direct effect + indirect effect).

Table 5 Goodness-of-Fit Index (GFI)

Constructs	AVE	R^2
GMFN	0.561	
GSV	0.511	
GIM	0.532	0.542
GCB	0.556	0.568
Average scores	0.540	0.555
$GFI = \sqrt{\overline{AVE} \times \overline{R^2}}$	0.547	

Abbreviations: AVE, average variance extracted; GMFN, green mindfulness; GSV, green shared vision; GIM, green intrinsic motivation; GCB, green creative behavior.

The first hypothesis demonstrated that GMFN has a significant positive impact on service employees' GCB. The empirical findings support this hypothesis such that employees who draw upon their unique cognitive resource pertaining to environment, ie, GMFN are more responsive towards ecological issues and they act sustainably and creatively to promote environmentalism. Our findings are in harmony with previous literature that has documented the positive influence of GMFN on employee green behaviors. For instance, Chen et al[30] identified the significant role of GMFN on employee green organizational citizenship behavior. Similarly, Kalyar et al[4] found employees as more creative regarding environment who are more mindfully green than others. In addition, we expect that our findings advance implications of GMFN on other employee outcomes, eg, green in-role and- extra-role behaviors.

Similarly, the second hypothesis stated that GMFN has a significant positive impact on GIM, which is largely supported by our empirical results. Our findings are in congruent with prior studies and endorsed the applicability of GIM on employees GCB. For instance, a host of researchers in the recent years found positive correlations between GIM and green creativity.[15] Additional insights from the general intrinsic motivation suggest that employees who are intrinsically motivated and seek pleasure in their jobs are more contended and motivated to devise unique and innovative ways to enhance the effectiveness of their jobs.[80] Taken together, we also suggested the mediating role of GIM between GMFN and GCB. The findings reveal the partial mediating role of GIM between GFM and GCB. The mediating role of GIM between GMFN and green organizational citizenship behavior has been reported in prior study.[30] Further, a review of preliminary studies indicate that mindfully green employees have higher levels of beliefs in their abilities, ie, self-efficacy, leveraging employees' green outcomes.

The fourth and fifth hypotheses demonstrated that the relationship between GMFN and GIM (and GCB via GIM) is moderated by GSV such that the associations are strong (weak) at high (low) levels of GSV. Our results indicate that GSV significantly influence the association between GMFN and GIM and (GCB). The results of these analyses expand the implications of shared vision from general to sustainability perspectives. For instance, previous studies have linked Eldor[81] and Wang[82] shared vision as a stimulating factor reinforcing the impact on employees' service performance. Despite the meaningful role of GSV in leveraging employee outcomes, sustainability scholars have rarely investigated its association on employees' green behaviors. Hence, our study unearths the boundary effects of GSV in the context of GCB to facilitate employee sustainable and creative behaviors.

Implications for Theory

The study provides several novel insights by identifying a connection between GMFN and GCB in the tourism and hospitality industry. First, despite articles in the popular press[2,3] that emphasize the importance of such practices in the tourism and hospitality industries,[26] environmental research is attempting to investigate what motivates people to adopt sustainable business practices. Even though existing research has employed theoretical and empirical perspectives that address environmentalism.[4,6,8–10,14] There are repeated calls to investigate the boundary conditions of employees' pro-environmental behaviors that may promote environmentally friendly practices in tourism firms.[26] Most earlier studies have looked into elements that influence increased green creativity.[34,42,48] However, there is still a need to employ robust theory that could provide more compelling justifications for how particular behaviors can be changed to be environmentally friendly. Given that SDT backs up our theoretical conclusion and explains the variables influencing GCB in the tourism businesses.

Second, previous studies[26,44] have amassed evidence for the impact of breath-of-attention on GCB. However, encapsulating environmental concerns and especially using the cognitive faculty of human intellect (ie, GMFN) to culminate in increased GCB is unique. This highlights the relevance and importance of our study even more. Our findings expand the implications of SDT and suggest that people's cognitive resource, GMFN, ie, "intentional awareness, non-judgmental observation and non-reactivity to present-moment stimuli", is an important component of GCB that enables employees of hospitality service firms to focus more on pro-environmental issues and a sense of connection to nature. Therefore, people who practice mindfulness are more receptive to experiencing and acting in ways that promote greater ecology.

Third, we hypothesized that mindfully green personnel would produce superior GCB, but a causal mechanism interferes with the underlying mechanism. On the basis of non-evaluative, moment-to-moment judgment,[61] we

investigated the mediating role of GIM and discovered that mindfully green employees develop a love and passionate interest for the environment,[4] and are thereby motivated by internal drive or rewards that translate into elevated GCB. The study's contribution is thus original and significant. For instance, current research has examined the crucial impact that intrinsic motivation has on an employee's creativity.[45,56] However, measuring GIM in the relationship between GMFN and GCB has yet to be investigated, especially in scenarios that support the environment. Consistent with previous research, we assessed GIM as a mediating variable, engendering an autonomous drive in pro-environmental activities.[10,52]

Last but not least, the study examined the boundary impacts of GSV to extend the GMFN-GCB nexus boundary conditions. The research complied with the call of Hooi et al[26] to investigate boundary effects of contextual elements that could account for employees' GCB. We discovered that employees who believe their companies care more about the environment are more likely to become enthusiastic and optimistic about carrying out an extra-role activity that involves their creative input to address environmental issues. As a result, GSV acts as a catalyst to improve the subordinates' mindful organization and to inspire internal drive, which eventually results in GCB. As a result, by focusing on GSV as a boundary condition in the GMFN-GCB nexus, the current study extends the existing body of knowledge on organizational behavior.

Implications for Practice

The results of this study have important ramifications for business owners and managers in the tourism and hospitality sector. Given the crucial role that GCB plays in the tourism and hospitality industry, the hypothesized model provides insights for service businesses to take advantage of the first mover by applying pro-environmental creative approaches by utilizing individual and contextual elements. This will enable companies to improve their reputation and image.[4] Under the UN's sustainable development goals, regulatory institutions in Pakistan are putting more pressure on service companies in the tourism and hospitality sector to take environmentally friendly initiatives by integrating green practices into business strategy and processes.[83] Our study's findings show that GMFN significantly contributes to GCB for businesses in the hospitality sector. As a result, relevant organizational interventions should be made to improve employee GMFN. Managers should create a parameter for personnel selection based on GMFN and conduct mindfulness training and workshops to stimulate GCB.

Second, our results support the usefulness of green motivation as a crucial component that heightens workers' interest in helping environmentally friendly innovation in the tourism and hospitality sector. Although increased job demands and external pressures influence employees' attitudes and behaviors,[10] we advocate for management to encourage staff to support pro-environmental efforts based on internal motivation and rewards. As previously mentioned, people who follow their intrinsic motivation experience a greater sense of self-determination because it grants them the freedom and liberty to carry out duties to accomplish common goals and objectives. Therefore, the job characteristics and a green workplace could encourage employees to act environmentally friendly.

Finally, our results highlight the crucial role of GSV as a boundary condition of the GMFN-GCB nexus. We recommend that to have a trickle-down effect and foster a green mindset in the workplace, firms should enable an impression of environmentalism in their staff members. Organizations should be aware of the significance of GSV in utilizing mindful organizing to boost GCB because shared vision offers a collective strategic direction that guides members' actions in the right direction and transforms their proactive attitudes and behaviors.

Limitations and Directions for Future Research

The findings of this study should be read with its limitations. First, this study used a time-lagged, multi-source design to acquire data from individuals working in service firms in the tourism and hospitality industry in Pakistan. Although the authors collected data using multisource and time-lagged design, the use of purposive sampling limits its generalizability. Hence, cautions should be given in interpreting the results of the study. Besides, future studies can examine the proposed model over time using a longitudinal research strategy. The present study answers the call of Kalyar et al[4] and ascertained the mediating role of motivational mechanisms, ie, GIM, in the link between GMFN and GCB. Even though the study finds the significant mediating role of GIM in the underlying linkage; however, the impact is partial, ergo, future research

should explore other cognitive mechanisms that may also underlie the correlation. Third, the current study explored the boundary effect of GSV in the GMFN-GCB link. We recommend that future studies look into the border effects of additional individual and/or contextual elements to study the contingent impact. Lastly, because this study was conducted in the context of non-Western culture, conclusions should not be extrapolated to Western nations.

Conclusion

The current study anchored on the SDT to predict the association between GMFN and GCB through the mediator effect of GIM and the moderator effect of GSV. The authors investigated the theorized model using a sample obtained from the service employees through a time-lagged, multisource survey. As projected, our findings indicate that GIM mediates the association between GMFN and GCB. Besides, the moderating role of GSV signifies that the underlying associations are strengthened (weekend) at high (low) levels of GSV.

Ethical Standards

This study adheres to the guidelines of the ethical review process of the associated universities and approved by the ethics committees of these universities (Huaiyin Institute of Technology, China; University of International Business and Economics, China; Riphah International University Pakistan; Comsats University, Pakistan; The University of Faisalabad, Pakistan). Further, all participants provided informed consent.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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