“Antecedents of organizational citizenship behavior for the environment”

AUTHORS	Anas Adow Sulphey M. M.

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Anas Adow (Saudi Arabia), **Sulphey M. M.** (Saudi Arabia)

ANTECEDENTS OF ORGANIZATIONAL CITIZENSHIP BEHAVIOR FOR THE ENVIRONMENT

Abstract

This study examines the relationships between green shared values, employee green behavior, green values, and organizational citizenship behavior toward the environment. Using partial least squares structural equation modeling, the study aims to enhance understanding of the antecedents of organizational citizenship behavior toward the environment, an underexplored concept. Data were collected from 384 respondents through an online survey. Analysis of the data revealed that all hypothesized relationships are statistically significant. Specifically, green shared values significantly influence environmental goals belief ($\beta = 0.452$, $p < 0.01$) and organizational citizenship behavior toward the environment ($\beta = 0.410$, $p < 0.01$). Employee green behavior also significantly impacts organizational citizenship behavior toward the environment ($\beta = 0.460$, $p < 0.01$). At the same time, green values strongly influence employee green behavior ($\beta = 0.507$, $p < 0.01$) and have a direct effect on the impact of organizational citizenship behavior toward the environment ($\beta = 0.064$, $p < 0.05$). These findings support earlier theoretical models, demonstrating the crucial role of green values and beliefs in promoting environmentally responsible behaviors in organizations. The study's implications suggest strategies for fostering a green culture, such as sustainability training and green leadership, to enhance employee engagement in environmental initiatives.

Keywords antecedents, green behavior, green shared values, green values, organizational citizenship behavior, structural equation modeling

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Anas Adow, Ph.D., College of Business Administration, Prince Sattam Bin Abdulaziz University, Saudi Arabia.

Sulphey M. M., Ph.D., Professor, Head of the Department of HRM, College of Business Administration, Prince Sattam Bin Abdulaziz University, Saudi Arabia. (Corresponding author)

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INTRODUCTION

Employee environmental actions are critical for corporate greening success and sustainability. Environmental damage, such as resource depletion, pollution, and biodiversity loss, is primarily attributable to industrial activities and human behavior. This requires organizations to focus on fostering environmentally friendly behavior among their employees. This perspective led to the development of the organizational citizenship behavior for the environment (OCB-E) concept. OCB-E is "individual and discretionary social behaviors not explicitly recognized by the formal reward system that contribute to more effective environmental management by organizations" (Boiral & Paillé, 2012). Evolving from organizational citizenship behavior (OCB), OCB-E encompasses voluntary pro-environmental actions, including pollution prevention, waste reduction solutions, and the adoption of environmentally friendly technologies. OCB-E is driven by several variables: self-efficacy, values, self-identity, and environmental beliefs (Huda et al., 2021). It inspires initiatives such as knowledge sharing to prevent pollution and proposes resource reduction strategies.

Since its introduction, OCB-E has garnered significant academic interest (Paillé et al., 2014, 2018). OCB-E is crucial in the current business

landscape due to the unmanageable environmental challenges it faces. The indispensability of OCB-E lies in its ability to enhance energy efficiency and effective waste management. Employees who exhibit OCB-E demonstrate heightened ecological awareness and engage in voluntary eco-initiatives. They propose resource reduction measures and encourage eco-friendly practices among their colleagues. OCB-E also complements official environmental management systems (EMS) by addressing gaps that the formal systems may overlook, helping organizations reduce ecological costs and improve their environmental reputation. Its role in promoting voluntary environmental behavior underscores its importance in the evolving industrial landscape.

Despite the increasing interest and substantial literature on OCB-E, several gaps warrant further investigation. Existing research has primarily focused on the impact and outcomes of OCB-E on organizational sustainability and environmental performance. However, fewer studies have explored the antecedents that foster OCB-E among employees. While self-efficacy, values, self-identity, and environmental beliefs have been identified as drivers (Huda et al., 2021), the interplay between these factors and their relative influence on OCB-E remains unclear. Additionally, there is a lack of inquiry examining the relationships between green value, employee green behavior, and green shared value as antecedents of OCB-E. This gap is critical because understanding these relationships can provide a deeper understanding of how organizations can encourage environmental management practices and foster a sustainability culture.

1. LITERATURE REVIEW

This study draws inspiration from the norm activation model (NAM) (Schwartz, 1977) and the value-identity-personal norms (VIP) model. The NAM posits that prosocial motives, such as concern for the future, humanity, other species, and the environment, lead to environmentally favorable behaviors. NAM has identified various pro-environmental behaviors, including waste reduction, reuse, and activities promoting sustainability (Zeiske et al., 2020). According to NAM, individuals' moral standards guiding their environmental behavior are shaped by their responsiveness to environmental issues, their voluntary acceptance of responsibility, and the social support they receive.

Another theory related to the study is the values-beliefs-norms model (VBN) postulated by Stern et al. (1999). This theory suggests causative relationships. Drawing insights from Sulphey et al. (2023, 2024), green values and a shared vision provide the knowledge, skills, and resources necessary to foster environmentally friendly attitudes and behaviors.

The VIP model proposed by Ruepert et al. (2016) is a succinct model that highlights the normative antecedents of pro-environmental behaviors. Like previous theories, the VIP model emphasizes the importance of individuals' support for environmental values as a predictor of environmentally friendly and sustainable behaviors (Khan et al., 2020; Zeiske et al., 2020). Green values are posited to influence personal green behaviors, OCB-E, with individuals more likely to perceive themselves as environmentally friendly and act accordingly if their green values are robust. A multidimensional approach that promotes green attitudes and behaviors must address contemporary environmental challenges (Jackson, 2005).

This study is also rooted in social information processing theory (Thomas & Griffin, 1989), which posits that immediate social settings influence employee attitudes and behaviors. Employees interpret cues from their work environment and adopt behaviors they perceive as appropriate (Maheswaran & Chaiken, 1991; Urban et al., 2023). According to this theory, an individual's social context and environment shape their attitudes and behaviors (Thomas & Griffin, 1989). Thus, it can be inferred that employee attitudes and behaviors are affected by their perceptions of the work environment. Hence, a multidimensional view promoting a green attitude, behavior, and sustainability is ideal.

Over the past few years, researchers and social scientists have examined the concept of organizational citizenship behavior for the environment

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(OCB-E), extending the literature on organizational citizenship behaviors (OCBs). Daily et al. (2009, p. 246) define OCB-E as "discretionary acts by employees within the organization not rewarded or required that are directed toward environmental improvement". Thus, OCB-E encompasses discretionary actions not recognized by formal reward systems that benefit the organization and its members (Organ, 1988; Shafaei & Nejati, 2024).

According to Lamm et al. (2013) and Liu et al. (2020), OCB-E is a voluntary behavior not specified in job descriptions and can collectively contribute to organizational and societal sustainability. Sarid and Goldman (2021) identified it as a moral-political philosophy that promotes sustainable behavior by linking individuals to the "common good." Committed and empowered employees, supported at work, are more likely to engage in OCB-Es (Paillé et al., 2014). When employees perceive their organizations as valuing sustainability, they perform OCB-Es regardless of their motives. In addition, employees with strong organizational identification tend to perform OCB-Es irrespective of the rationales (Tosti-Kharas et al., 2016). According to Temminck et al. (2015), OCB-E precedes environmental beliefs. Paillé et al. (2014, 2018) and Sulphey et al. (2024) suggest that OCB-E has a cascading effect on enhancing ecological performance, a finding also supported by other social scientists, such as Liu and Qi (2022), Ramus and Killmer (2007), and Boiral (2009). Neessen et al. (2021) and Priadi et al. (2018) found that eco-sensitivity, knowledge, and locus of control have a positive influence on OCB-E. This could also facilitate the implementation of environmentally friendly practices and help bridge gaps in practices outside formal systems (Raineri & Paillé, 2016; Zhao & Zhou, 2021). Studies have also confirmed that OCB-E creates a pro-environment organizational atmosphere (Zientara & Zamojska, 2018).

Green value appraises the benefits of products, services, or activities in the light of environmental considerations (Chen & Chang, 2012). This concept encapsulates the value placed on sustainability and environmental responsibility, reflecting how they influence perceptions of worth. Incorporating green value can help organizations better assess the environmental implications of their decisions and their impact on sustainability goals. Personal values influence individual attitudes and behaviors toward environmental conservation, with green value being essential for moral development and fostering ecological attitudes, habits, and behaviors. It is also positively correlated with environmental values and green behaviors, aiding in developing solutions to environmental challenges.

Robertson and Barling (2013) noted that green value has a significant influence on employee behavior, leading to pro-environmental actions that support sustainability. Andersson et al. (2005) and Schultz et al. (2005) have highlighted the significant positive impact of green value on environmentally friendly behaviors. Additionally, green value enhances green trust, providing various benefits and influencing individual purchasing decisions (Cheung et al., 2015). According to Li et al. (2020), green value can enhance motivation and promote greater participation in environmentally friendly behaviors. Individuals with strong green values tend to reduce unnecessary consumption and adopt moderation (Furchheim et al., 2020). It also significantly influences green trust, deriving various emotional and environmental benefits (Cheung et al., 2015). Schultz et al. (2005) found that green value influences various environmentally friendly behaviors. Such pro-environmental behaviors could also be OCB-E, which could facilitate organizational sustainability. Only a few studies have focused on the internal green behaviors of employees (Wells et al., 2016).

Employee green behavior refers to the actions taken by employees to conduct their work in an environmentally friendly manner (De Roeck & Farooq, 2017). It evolves from the green culture prevalent in the organization and is reinforced by individual values (Harris & Crane, 2002). Employee green behavior is based on various socio-psychological processes (Roscoe et al., 2019). When personal values align with or exceed organizational values, it can lead to positive attitudes and behaviors (Edwards, 1996). Empirical evidence suggests that employees exhibit green behavior when they find their organization environment-friendly (Raineri & Paillé, 2016). Such behaviors include recycling, using resources efficiently, participating in environmental initiatives, and implementing more

sustainable policies. These green behaviors could facilitate additional environmental protection-related services, which could extend beyond the workplace (Raineri & Paille, 2016; Sulphey & Faisal, 2021). Thus, employees experiencing high levels of value fit respond positively to their organizations (Ahmad & Umrani, 2019). In line with this, Islam et al. (2020) found that individual green value results in employee green behavior. Hameed et al. (2020) found that individual values could predict green attitudes and behaviors. The study also found that green value has a significant impact on employees' green attitudes and behaviors.

Research evidence proves that pro-environmental awareness, incentives, and training initiated by organizations are crucial for promoting employee green behavior (Pham et al., 2019). Studies have examined the mediating variables of employee green behavior, like affective commitment to environmental change (Pinzone et al., 2016), green climate (Dumont et al., 2017), and green intellectual capital (Nisar et al., 2021). According to Anwar et al. (2020), organizations inspire employee green behavior among their members by implementing voluntary green projects. Dumont et al. (2017) found that employee green behavior could influence in- and extra-role green behaviors, thus pointing towards OCB-E.

Promoting employee green behavior could help foster OCB-E, leading to environmental sustainability. Norton et al. (2014) and Robertson and Barling (2013) suggest that organizations that place significant value on employee green behavior can stimulate employee citizenship roles and achieve overall organizational sustainability goals more effectively. Hooi et al. (2022) opined that organizations that value pro-environmental attitudes and beliefs could foster employee green behavior and the resultant OCB-E. They also contend that green culture could mediate between employee green behavior and OCB-E.

Green shared vision is a relatively new term, conceived only in the early 2000s. Chen et al. (2015, p. 1171) define green shared vision as "a clear and common strategic direction of collective environmental goals and aspirations that has been internalized by members of an organization." It is a strategic, transparent, and shared direction that focuses on realizing ecological objectives and environmental goals (Younas et al., 2023). It is a shared vision among organizations and their members that aims to achieve comprehensive, sustainable development. Organizations that aspire to have a green shared vision wholeheartedly exchange ideas with their members, benefiting both. Green shared vision provides a direction toward an organization's environmental goals (Chen et al., 2014a), promising a competitive edge and success (Jansen et al., 2008). It is an organizational vision focused on sustainable development through ecological and environmental development. Rooted in environmental friendliness and shared aspirations, the green shared vision provides a clear strategic course for members to pursue ecological objectives (Chang et al., 2019). It fosters shared visions and provides employees with clear direction (Alt et al., 2014). It is a potent organizational tool that permeates all strategic business aspects, motivating the elevation of perspectives and performance beyond conventional boundaries. It encourages members to identify, engage with, and synergize creativity and innovation (Wu & Chen, 2018).

Younas et al. (2023) identified green shared vision as a precursor to individual green values. According to Chen et al. (2020), green shared vision is associated with pro-environmental behaviors and enhanced performance. Chang (2020) found that employees with a green shared vision integrate seamlessly into the organizational culture and exhibit green behaviors. It serves as a catalyst that facilitates the development of a green identity, providing a strategic direction that enables organizational members to achieve ecological efficiency (Chen et al., 2015).

Schultz et al. (2005) found a positive correlation between individual ecological beliefs and behaviors. A shared vision helps employees exhibit enhanced creativity, which enables them to attain competitive advantages that facilitate the achievement of crucial organizational objectives, often surpassing expectations (Sulphey, 2019; Vogus & Sutcliffe, 2012). It also helps organizations achieve competitive advantages and effectiveness (Boyatzis et al., 2015). Furthermore, a shared vision catalyzes organizational success (Shin & Zhou, 2007), empowering employees to adopt a broader perspective on the organi-

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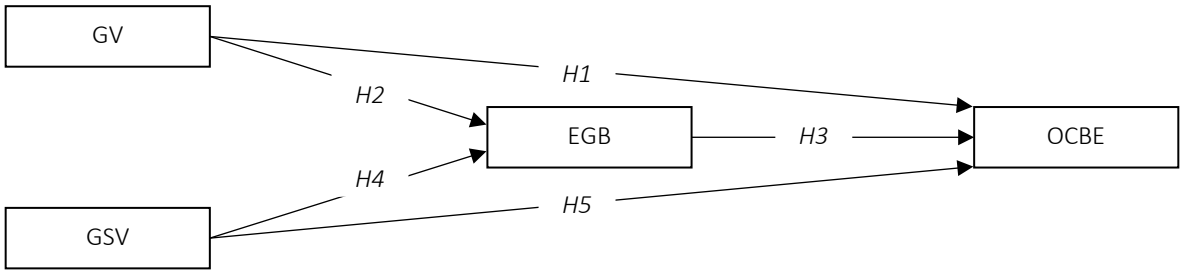

Note: GV = green value; GSV = green shared vision; EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

Figure 1. Proposed model

zation's performance. Chang (2020) noted that employees aligned with a green shared vision seamlessly integrate into the organizational culture and exhibit high-quality, environmentally conscious performance. It also helps cultivate a green identity and foster emotional ownership among organizational members (Chang, 2020). Jansen et al. (2008) opine that shared vision can strategize and facilitate corporate success. When organizations prioritize a green shared vision, members consider their contributions worthwhile and meaningful (Ma et al., 2023). These findings underscore the potential of green shared vision to nurture OCB-E. The objectives of the study are to examine the relationships between green value, employee green behavior, and green shared value as antecedents of OCB-E. Based on the reviewed literature, the following hypotheses are formulated:

H1: A significant positive relationship exists between green value and OCB-E.

H2: There is a significant positive relationship between green value and employee green behavior.

H3: A significant positive relationship exists between employee green behavior and OCB-E.

H4: There is a significant positive relationship between green shared vision and employee green behavior.

H5: A significant positive relationship exists between green shared vision and OCB-E.

Based on the five hypotheses formulated for the study, a research model (Figure 1) is proposed.

2. METHODOLOGY

The study employed a questionnaire-based approach to answer the research questions. Ethical standards were upheld by ensuring respondent confidentiality, with no identifying information. The following four existing scales were used to collect data:

1. The five-item green value questionnaire developed by Brown and Kasser (2005) and purified by Islam et al. (2020) was used in this study. The tool had two subscales: Environmental attitude and sustainability. The reliability of the tool was 0.84.

2. The four-item questionnaire, developed and standardized by Jansen et al. (2008) and modified by Chen et al. (2014b), was used to measure green shared vision. This tool reported a robust alpha reliability of 0.90.

3. To measure employee green behavior, the six-item questionnaire developed by Bissing-Olson et al. (2012) was used. The scale had a reliability of 0.90, which is robust.

4. Organizational citizenship behavior for the environment (OCB-E) was measured using the nine-item questionnaire developed and validated by Boiral and Paillé (2012). It measured the eco-helping, eco-initiatives, and eco-civic engagement of the respondents. The scale had a robust reliability alpha.

The study employed a five-point scale, ranging from "strongly agree" to "strongly disagree," for all questionnaires. These questionnaires were administered online in English and Arabic to gain-

fully employed respondents across Saudi Arabia. The survey link was distributed across various social media groups, inviting members to participate, thereby ensuring maximum outreach to diverse respondent groups. Four hundred fifty-three individuals responded to the data collection process over eight weeks. Since all items had to be mandatorily responded to, no data were missing. Hence, all responses were analyzed. The control variables included demographics like gender, age, experience, and education. Hameed et al. (2020) and Lamm et al. (2013) have found an association between environmental performance and demographics. The collected sample enjoyed wide diversity (Table 1). The minimum age was 18, and the maximum was 70 years. 42.76 years was the mean age. The total work experience ranged from less than a year to 46 years. The average years of experience was 16.91.

Table 1. Demographics

Demographics		Number	%
Nationality	Saudi Arabian	412	90.9
	Expatriate	41	9.1
Gender	Male	108	23.8
	Female	345	76.2
Qualification	High school	53	11.7
	Higher Secondary	45	9.9
	Graduate	197	43.5
	Master's	64	14.1
	Doctorate	94	20.8

The adequacy of the sample size is crucial for structural equation modeling (SEM) analysis. Krejcie and Morgan (1970) provided guidelines in the form of a table for determining the necessary sample size based on the population size. Their table suggests that 384 samples are sufficient to represent one million, and the sample size decreases as the population size increases, stabilizing at around 380. According to Suskie (1996), a sample of 364 is ideal for maintaining a sampling error of 5%, a criterion also supported by Gill and Johnson (2010). Previous study by Sulphey et al. (2023) have closely adhered to these guidelines. Therefore, the 453 samples collected for this study are appropriate. Moreover, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.943, indicating a high degree of adequacy, which facilitates the conduct of SEM. Additionally, Bartlett's Test of Sphericity yielded a chi-square value of 7950.923 with a significance level of 0.000, further supporting the suitability of the data for SEM analysis.

3. RESULTS

SmartPLS (version 2.0.M3) was used to analyze the data (Ringle et al., 2005). The initial step in the analysis is to evaluate the outer model.

Self-reported data may be subject to issues related to common method bias (CMB), which could adversely affect the validity of the measures. We employed several precautions to mitigate potential problems pertaining to CMB arising from the simultaneous measurement of different variables, as recommended by Podsakoff et al. (2012). Data collection occurred in two distinct phases, separated by a 10-day lag. Anonymity was maintained throughout the survey, ensuring respondents felt comfortable providing honest responses. In addition, items were randomized within the questionnaire, and items from different questionnaires were separated to minimize any potential bias introduced by question order. Respondents were explicitly requested to make their responses honest. These measures helped confirm the absence of CMB and bolstered the robustness and validity of the measures employed in the study. Harman's single-factor test was also conducted, revealing that the first factor accounted for 49.051% of the variance, which falls below the threshold proposed by Chang et al. (2010) and Podsakoff et al. (2012), indicating the nonexistence of CMV.

Table 2. VIF (Inner model list)

Paths	VIF
EGB → OCBE	2.638
GSV → EGB	1.138
GSV → OCBE	1.677
GV → EGB	1.138
GV → OCBE	1.817

Note: GV = green value; GSV = green shared vision; EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

The presence of collinearity among latent variables can result in biased path coefficients. To address this, the study employed the indicator variance inflation factor (VIF) to assess collinearity between endogenous constructs before analyzing the structural model (Ringle et al., 2015). While there is no unanimity on optimal VIF, Rahi (2012) suggested a threshold of less than 3.3. The inner VIF values (Table 2) ranged from 1.138 to 2.638, all of which are ≤ 3.3 and

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thus meet this criterion. Kock and Lynn (2012) also recommend VIF ≤ 3.3 to mitigate collinearity issues. According to Hair et al. (2011), a VIF of five or higher indicates a possible collinearity issue for outer loading. Table 2 shows that there are no collinearity issues. These results suggest an absence of lateral multicollinearity concerns and confirm that common method bias (CMB) issues are not present (Hair et al., 2016). There is also a need to assess the significance and relevance of formative indicators, with outer loadings being crucial for evaluating their contribution. Outer loadings determine each indicator's contribution to the construct (Hair et al., 2016). The outer factor loading indicates convergent validity, as the values are above 0.70 (Hair et al., 2014). According to Nunnally (1978), an alpha value above 0.70 is considered satisfactory. The values (Table 3) indicate a meeting of the stipulation, signifying reliability.

Table 3. Outer loadings

	EGB	GSV	GV	OCB-E	VIF
EGB1	0.829				2.560
EGB2	0.871				3.639
EGB3	0.846				3.129
EGB4	0.740				1.980
EGB5	0.832				2.462
GSV1		0.874			2.845
GSV2		0.912			3.527
GSV3		0.903			3.298
GSV4		0.869			2.687
GV1			0.779		1.981
GV2			0.829		2.413
GV3			0.775		1.864
GV4			0.833		2.177
GV5			0.735		1.432
OCB-E1				0.839	2.694
OCB-E2				0.819	3.011
OCB-E3				0.833	3.254
OCB-E4				0.867	3.276
OCB-E5				0.847	2.947
OCB-E6				0.813	2.413
OCB-E7				0.834	2.924
OCB-E8				0.837	3.184
OCB-E9				0.807	2.592

Note: GV = green value; GSV = green shared vision; EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

Hair et al. (2010) propose that construct validity provides insights into the quality of the measures. Fornell and Larcker (1981) state that validity and reliability are essential before testing the significance of relationships. Alpha and composite reliability were used to examine consistency. Table 4 indicates that all rho_a values exceeded 0.70 (Dijkstra & Henseler, 2015). The average variance extracted (AVE) is a measure for assessing convergent validity. The AVEs ranged between 0.626 and 0.792, exceeding the minimum of 0.50 stipulated by Fornell and Larcker (1981). This indicates internal consistency and convergent validity.

Table 4. Construct reliability and validity

	Alpha	rho_a	rho_c	AVE
GV	0.851	0.855	0.893	0.626
GSV	0.912	0.912	0.938	0.792
EGB	0.882	0.882	0.914	0.680
OCB-E	0.945	0.945	0.953	0.694

Note: GV = green value; GSV = green shared vision; EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

Discriminant validity denotes that the constructs are distinct, which was examined using the Fornell-Larcker criterion (Fornell & Larcker, 1981) and the heterotrait-monotrait ratio (HTMT) (Henseler et al., 2015). The Fornell-Larcker criterion stipulates correlation values that are less than the square root of AVE (Table 5). This indicates this requirement is satisfied.

Table 5. Fornell-Lacker criterion

	EGB	GSV	GV	OCBE
EGB	0.825			
GSV	0.629	0.890		
GV	0.665	0.348	0.791	
OCB-E	0.760	0.721	0.512	0.833

Note: GV = green value; GSV = green shared vision; EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

The heterotrait-monotrait (HTMT) ratio examines discriminant validity. HTMT has better specificity and sensitivity rates (97% to 99%) against the Fornell-Larcker criterion (Henseler et al., 2015). Any HTMT values close to one denote the absence of discriminant validity. Gold et al. (2001) and Kline (2011) suggested threshold values of 0.85 and 0.90 for the HTMT criterion, respectively. Values exceeding these thresholds indicate no discriminant validity. The details presented in Table 6 suggest that the HTMT values meet the requirements of Gold et al. (2001) and Kline (2023), thus confirming discriminant validity.

Table 6. Heterotrait-monotrait (HTMT) ratio

	EGB	GSV	GV	OCB-E
EGB				
GSV	0.696			
GV	0.758	0.384		
OCB-E	0.830	0.776	0.562	

Note: GV = green value; GSV = green shared vision; EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

Model fit is a prerequisite for model validation (Kline, 2023). Hair et al. (2014) state that model fit is examined using SRMR, d_ULS, d_G, and NFI. Model fit is assumed if SRMR is < 0.08 (Hu & Bentler, 1998) and NFI is less than 0.9 (Bentler & Bonett, 1980; Hair et al., 2014). In this study, SRMR was 0.070, and NFI was 0.856. The d_ULS and d_G provide the covariance matrix and composite factor model covariance matrix (Hair et al., 2016). Henseler et al. (2016) suggested that d_ULS and d_G should be lower than the starting quantile of 95%. The d_ULS and d_G were 1.357 and 0.444, respectively. Hence, the model values meet the required stipulations, indicating goodness of fit. Next, the coefficient of determination (R^2) and adjusted R^2 are the next steps in assessing the structural model (Dijkstra & Henseler, 2015). The two indicate the percentage of variability accounted for by the antecedent constructs. The coefficient of determination (R^2) and path coefficients evaluate the structural model (Dijkstra & Henseler, 2015). Hair et al. (2011, 2013) suggested that minimum R^2 values of 0.50 for endogenous latent variables should be adequate. Cohen (2013) proposed R^2 of 0.26 and 0.13 to indicate significant and moderate intensities of explanatory power. The analysis revealed R^2 values of 0.140 and 0.485, indicating robust explanatory power (Cohen, 2013). The adjusted *R*-squared helps assess the explanatory power of a model across various datasets. The R^2 in this study is 0.621 and 0.678, indicating appropriate explanatory power (Table 7).

Table 7. R-Squared

Variables	R-squared	R-squared adjusted
EGB	0.621	0.620
OCB-E	0.678	0.677

Note: EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

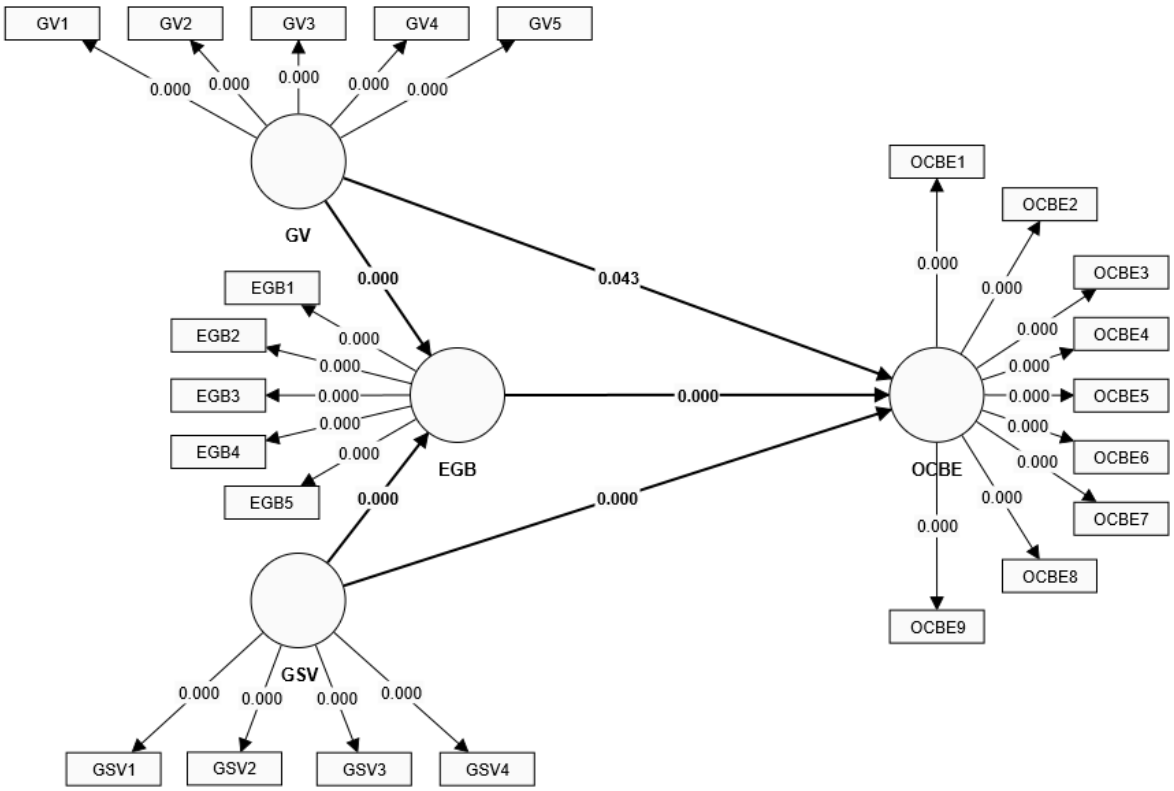

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Figure 2. Model after bootstrapping (10,000 times)

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Table 8. Path coefficients

Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Acceptance
H1: GV → OCB-E	0.064	0.064	0.032	2.020	0.043	Accepted
H2: GV → EGB	0.507	0.508	0.025	20.429	0.000	Accepted
H3: EGB → OCB-E	0.460	0.461	0.038	12.126	0.000	Accepted
H4: GSV → EGB	0.452	0.451	0.026	17.334	0.000	Accepted
H5: GSV → OCB-E	0.410	0.410	0.031	13.425	0.000	Accepted

Note: GV = green value; GSV = green shared vision; EGB = employee green behavior; OCB-E = organizational citizenship behavior for the environment.

This study employed a multi-analytical technique to test the hypothesized relationships. PLS-SEM was used to validate and predict conceptual models proposed through theoretical frameworks. Bootstrapping was applied to examine significance, using a bootstrapping sample of 10,000 (Hair et al., 2016). The *t*-values helped evaluate the significance of the hypothesized paths. Table 8 shows that all five hypothesized relationships had high *t*-values, with four being accepted at the 0.01 significance level. One hypothesis (H1) was accepted at the 0.05 significance level (*t*-value of 2.02). Hence, the proposed model is validated as all five hypotheses are accepted. Figure 2 shows the final model.

This study utilized a multi-analytical approach to investigate the relationships of green shared vision, employee green behavior, green value, and OCB-E. The study enhances the understanding of the antecedents of OCB-E, a relatively underexplored area in existing literature. The analysis, supported by a robust data set of 384 participants collected through an online survey, affirmed all hypothesized relationships, underscoring the significant roles of green shared vision, employee green behavior, and green value in fostering OCB-E. The results demonstrate that all five hypothesized relationships are statistically significant, with *t*-values exceeding the critical thresholds. Specifically, green shared vision has a significant influence on employee green behavior ($\beta = 0.452$, $p < 0.01$), underscoring the foundational role of shared green values in shaping environmental beliefs. Furthermore, the positive impact of green shared vision on OCB-E ($\beta = 0.410$, $p < 0.01$) confirms that organizations emphasizing green values can effectively promote employee engagement in environmentally friendly behaviors. This finding is consistent with Dumont et al. (2017), who observed that green behaviors enhance in-role and extra-role environmental actions.

4. DISCUSSION

This study confirms a significant relationship between employee green behavior and OCB-E ($\beta = 0.460$, $p < 0.01$), indicating that strong environmental goals and beliefs motivate employees to engage in pro-environmental citizenship behaviors. This aligns with Norton et al. (2014) and Robertson and Barling (2013), who demonstrated that organizational support for employee green behavior encourages employees to adopt behaviors that contribute to sustainability. Additionally, our findings support Hooi et al. (2022), indicating that organizations valuing pro-environmental attitudes can effectively enhance OCB-E. Moreover, the relationship between green value and employee green behavior is robust ($\beta = 0.507$, $p < 0.01$), reinforcing the notion that employees with strong green values are more likely to develop and endorse environmental goals. This aligns with Chang (2020), who found that employees with shared green values are more integrated into the organizational culture, enhancing their environmentally conscious performance. Finally, the direct influence of green value on OCB-E is also significant ($\beta = 0.064$, $p < 0.05$), though weaker than other paths, underscoring that while green values are essential, their impact on OCB-E is more nuanced. The findings contribute valuable insights to the literature on organizational sustainability and environmental behavior within the workplace context. Moreover, they offer practical implications for organizations seeking to foster a culture of environmental responsibility and citizenship among their employees, ultimately advancing efforts toward sustainability goals.

This study significantly advances the theoretical understanding of OCB-E by integrating the concepts of green shared vision, employee green behavior, and green value. It expands on the work of previous researchers by providing empirical evidence that these constructs collectively enhance OCB-E. The findings corroborate and extend the theoretical models proposed by Dumont et al. (2017), Chang (2020), and others, providing a comprehensive understanding of how environmental values and beliefs influence employee behaviors toward sustainability. This investigation underscores the importance of fostering a green culture within organizations to promote environmentally responsible behaviors. From a practical standpoint, the findings suggest several strategies for organizations aiming to enhance OCB-E. First, organizations should cultivate and promote green values among employees through targeted initiatives, such as sustainability training programs and green leadership. By aligning organizational goals with employees' environmental beliefs and values, companies can enhance employee engagement in sustainability practices. Additionally, creating platforms for employees to participate in green initiatives and recognizing their contributions can reinforce OCB-E. These strategies support environmental sustainability and enhance organizational culture and employee morale.

Although this study has provided multiple empirical contributions, it has several limitations. The cross-sectional design limits the ability to infer causal relationships between the variables. Future research should adopt longitudinal designs to explore the dynamic interactions among green shared vision, employee green behavior, green value, and OCB-E over time. Additionally, while PLS-SEM is effective for small sample sizes and non-normal data, future studies with larger, more diverse samples could enhance the generalizability of the findings. Exploring the moderating effects of contextual variables, such as industry type or cultural differences, could also provide deeper insights into the relationships between these constructs. In conclusion, this study validates the proposed model and opens avenues for further research into the antecedents of OCB-E. By advancing our understanding of how green shared vision, employee green behavior, and green value influence OCB-E, we provide a solid foundation for developing effective strategies to promote environmental citizenship behaviors in organizations.

CONCLUSION

The study aimed to examine the antecedents of organizational citizenship behavior for the environment (OCB-E). The specific antecedents examined include green shared values, employee green behavior, and green values. The findings underscore the significant roles of the examined variables in fostering OCB-E. Specifically, shared green values are foundational in shaping environmental beliefs and motivating employees to engage in pro-environmental behaviors. The study's robust dataset and rigorous statistical analysis affirm the validity of the proposed model, with all hypothesized relationships being statistically significant. These insights align with existing literature, reinforcing the importance of cultivating a green culture within organizations to promote sustainability.

This study offers several practical implications. Organizations aiming to enhance organizational citizenship behavior toward the environment should promote green values through targeted initiatives, such as sustainability training programs and green leadership. Aligning organizational goals with employees' environmental beliefs and values can enhance engagement in sustainability practices, ultimately supporting broader environmental and organizational objectives. This study provides a solid foundation for understanding how green values, environmental beliefs, and goals impact environmental citizenship behaviors within organizations. This theoretical and practical knowledge opens up avenues for further research and the development of effective strategies to promote environmental responsibility in the workplace. This paper validates the proposed model and provides a comprehensive framework for fostering a culture of sustainability and environmental citizenship, which is essential for organizational success in today's dynamic and complex business environment.

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AUTHOR CONTRIBUTIONS

Conceptualization: Sulphey M. M.
Data curation: Sulphey M. M.
Formal analysis: Sulphey M. M.
Funding acquisition: Anas Adow.
Investigation: Anas Adow.
Methodology: Sulphey M. M.
Project administration: Anas Adow.
Resources: Anas Adow.
Supervision: Sulphey M. M.
Writing – original draft: Sulphey M. M.
Writing – review & editing: Anas Adow.

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