

The Mechanism of Organizational Citizenship Behavior for the Environment in Improving Environmental Performance Across Different Industrial Sectors: A Systematic Review

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ABSTRACT

Green Organizational Citizenship Behavior (GOCB) is a key construct in supporting environmental performance across various industrial sectors. This study employs a systematic literature review (SLR) based on the PRISMA framework, analyzing 45 articles (2016–2026) to understand the mechanisms linking Green Human Resource Management (GHRM) practices, green leadership, employee motivation, and environmental outcomes. Results indicate that GOCB is influenced by individual capacity, social interactions, HR practices, and transformational green leadership. Training, rewards, and organizational culture play a crucial role in fostering voluntary pro-environmental behavior. Cross-cultural analysis highlights variations in the effectiveness of GOCB mechanisms according to geographical and regulatory contexts. This study also emphasizes the dominance of quantitative methods and the need for qualitative or mixed-methods approaches to understand the dynamics of pro-environmental behavior more deeply. Key contributions include a synthesis of GOCB mechanisms, cross-theoretical integration (AMO, SET, Social Learning Theory, COR), and the identification of research gaps in developed and cross-cultural contexts. Future research is recommended to use mixed-method designs, expand the scope of industries and regions, and incorporate cultural and institutional variables to strengthen theoretical models and practical applications.

Keywords: GOCB, GHRM, Green Leadership, Environmental Performance, AMO Theory, Sustainability.

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INTRODUCTION

In recent years, research on Green Human Resource Management (GHRM) and Organizational Citizenship Behavior for the Environment (OCBE) has expanded significantly, shifting from an exclusive focus on their direct relationship to a more mechanism-oriented and context-sensitive perspective. Early studies explored positive associations between GHRM and OCBE (Anwar et al., 2020; Pham et al., 2018). However, recent studies have paid greater attention to the mediating and contingent mechanisms explaining why and when these effects occur. For example, the role of a green organizational climate (Iqbal & Piwowar-Sulej, 2023), green transformational leadership (X. Liu & Yu, 2023; Priyadarshini et al., 2023), and environmental values (C.-H. S. Liu & Huang, 2020) have been identified as potential mechanisms influencing employees' voluntary pro-environmental behavior. It is worth noting that parallel developments indicate that innovation- and knowledge-oriented channels are also being integrated into this stream, such as green innovation (Saleh et al., 2026) and green knowledge sharing (Wijaya et al., 2025). Overall, these trends highlight the increasingly complex and layered nature of current GHRM–OCBE research, moving from simple correlational statements to more sophisticated explanations of how environmental performance can be promoted through human resource management techniques.

Much progress has been made, but systematic limitations have not yet been fully addressed in previous review studies and evidence mapping efforts. Specifically, previous review methodologies, such as systematic literature reviews (SLRs), bibliometric analyses, and meta-analyses, generally yield descriptive classifications regarding conceptual, contextual, and methodological aspects, as well as synthesized patterns to identify gaps. However, critical assessments highlight persistent limitations, such as low geographic representativeness and potential thematic biases, including an excessive concentration on specific locations (e.g., Asia) or specific sectors. Furthermore, some reviews aggregate findings at the aggregate level without sufficiently distinguishing mechanism pathways and boundary conditions across various industrial settings. Consequently, it remains unclear how GHRM-induced OCBE processes translate into environmental performance at the sectoral level and which contextual variables enhance or mitigate these mechanisms.

In this regard, this systematic review aims to analyze and synthesize research on GHRM and OCBE and their contributions to organizational environmental performance, focusing on the mechanisms linking these constructs and the factors influencing their effectiveness across various industrial sectors. It has two objectives: to elucidate the

nature of the GHRM–OCBE–environmental performance relationship by synthesizing reported mediators and moderators, and to identify recurring methodological and contextual patterns—such as research settings, empirical designs, and sources of evidence—that may explain inconsistencies in previous findings. By integrating these various aspects, this review is expected to provide a more comprehensive and mechanism-focused understanding of environmentally oriented organizational behavior, as well as actionable directions for future research and managerial practice in sustainability-oriented industries. We have two objectives: (1) to clarify the nature of the GHRM–OCBE–environmental performance relationship by synthesizing reported mediators and moderators, and (2) to identify recurring methodological and contextual patterns (e.g., research settings, empirical designs, and sources of evidence) that may explain inconsistencies in previous findings. By synthesizing these various aspects, this review is expected to provide a more holistic, mechanism-based insight into environmentally oriented organizational behavior and offer actionable guidance for future research and managerial practices in sustainability-oriented industries.

Novelty 1 (mechanism focus)

Does not merely stop at the GHRM-OCBE relationship but maps mediators/moderators and conditions that explain how OCBE flows into environmental performance. Novelty 2 (sector comparison): treats sector/industry differences as a crucial unit of interpretation, addressing the narrow contextual limitations of previous reviews. Novelty of contribution: produces a comprehensive mechanism-based synthesis + evidence profile (research trends, frameworks, designs, and dominant theories) as a foundation for future research agendas.

Novelty 2 (sector comparison)

considering sector/industry differences as meaningful units of interpretation, overcoming the limitations of previous reviews that tended to be narrow in context.

Novelty of contribution

Providing a comprehensive synthesis based on mechanisms + evidence profiles (research trends, context, design, and dominant theories) as a foundation for future research agendas.

LITERATURE REVIEW

OCBE and Green Human Resource Management (GHRM)

Studies investigating the application of Green Human Resource Management (GHRM) to environmental organizational citizenship behavior (OCBE) across various organizational contexts are on the rise. The literature generally suggests that GHRM policies not only impact employees' task performance but also influence discretionary pro-environmental behaviors that go beyond formal job requirements.

Empirical evidence suggests that GHRM can facilitate OCBE through various channels. For instance, (Luu, 2019) suggests that GHRM can enhance OCBE by enabling employees to engage in eco-friendly behavior through green craftsmanship and environmentally focused servant leadership. Consistent with this perspective, (Pham et al., 2019) demonstrated through a mixed-methods design that certain GHRM practices in hospitality organizations (e.g., green training, green performance management, and green employee engagement) can yield beneficial OCBE outcomes. Similarly, (Anwar et al.,

2020) further support this idea by showing that GHRM practices can improve OCBE and environmental performance, with OCBE serving as the mediator of this relationship.

Importantly, this body of research collectively indicates that OCBE can serve as a behavioral bridge between HR-oriented environmental programs and broader environmental outcomes. Unlike outcome-oriented perspectives, previous research has defined OCBE as a process that transforms organizational activities (through HR systems and procedures) into individual-level environmental contributions.

The Rise of OCBE and Environmental Leadership

Beyond HR-related antecedents, leadership literature also emphasizes that green leadership behavior is highly relevant to the emergence of OCBE. The literature highlights that leadership can influence the motivational and interpretive processes through which employees choose to engage in extra-role environmental behavior.

For example, (Priyadarshini et al., 2023) suggest that green transformational leadership enhances OCBE through mechanisms such as green empowerment and environmental passion. This implies that when leadership provides autonomy and affective commitment, people are more willing to internalize environmental ideals and translate them into voluntary actions. Similarly, (X. Liu & Yu, 2023) found that green transformational leadership influences OCBE through the environmental organizational climate and environmental concern, indicating that leadership affects not only individual moods and motivators but also collective norms and perceived expectations that facilitate OCBE.

Overall, these studies reveal a broader pattern: leadership-related influences appear to generate OCBE through cognitive-emotional interpretations of environmental goals and the social context in which workers operate.

Synthesis: Linking GHRM, Leadership Mechanisms, and Environmental Performance Overall, the evidence above suggests that OCBE may be explained by mechanism-focused theories, rather than simple main effects, according to the literature. Specifically, GHRM practices likely influence OCBE through HR system redesigns that enable employee learning, evaluation, engagement, and capability (e.g., training, performance management, and participation). Furthermore, green transformational leadership fosters OCBE through the influences of empowerment, passion, climate, and concern—that is, psychological and contextual factors that empower employees to “choose” environmentally friendly extra-role behaviors.

The logic of this dual mechanism aligns with the idea that environmental performance improves when organizations are able to effectively link their internal human capital infrastructure and leadership with individual employees’ pro-environmental attitudes and discretionary behaviors. Therefore, OCBE should be viewed as more than just a descriptive construct; it functions as a relevant mediating mechanism that links prior managerial practices (GHRM and green leadership) with downstream environmental effects.

Gaps (for SLR with a Focus on Future Mechanisms)

Despite these developments, significant gaps remain. First, the evidence base appears fragmented across industries (e.g., hospitality and manufacturing), yet the presented literature does not clearly articulate industry-specific boundary conditions—

namely, when and why the strength of the GHRM→OCBE vs. leadership→OCBE pathways varies by sector. Second, while the descriptions of mechanisms are promising, they vary in terms of operationalization (e.g., green craftsmanship, environmental passion, climate/concerns), which may limit cross-study comparisons and weaken the cumulative logic of “which mechanism is most important” across different contexts. Third, OCBE is often presented as a mediator, although the relationship between OCBE and measurable environmental performance may not always be consistently modeled using uniform outcome constructs, which can limit cumulative synthesis.

These gaps are central to your SLR’s focus on translating into environmental performance across various industries with a mechanism-centered review design.

RESEARCH METHOD

The methodological framework for this systematic review was developed using the widely accepted PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure that the methodology is robust, transparent, and reproducible. The complete PRISMA flowchart is shown in Figure 1, which displays the number of records at each stage and provides a visual overview of the entire search and selection methodology.

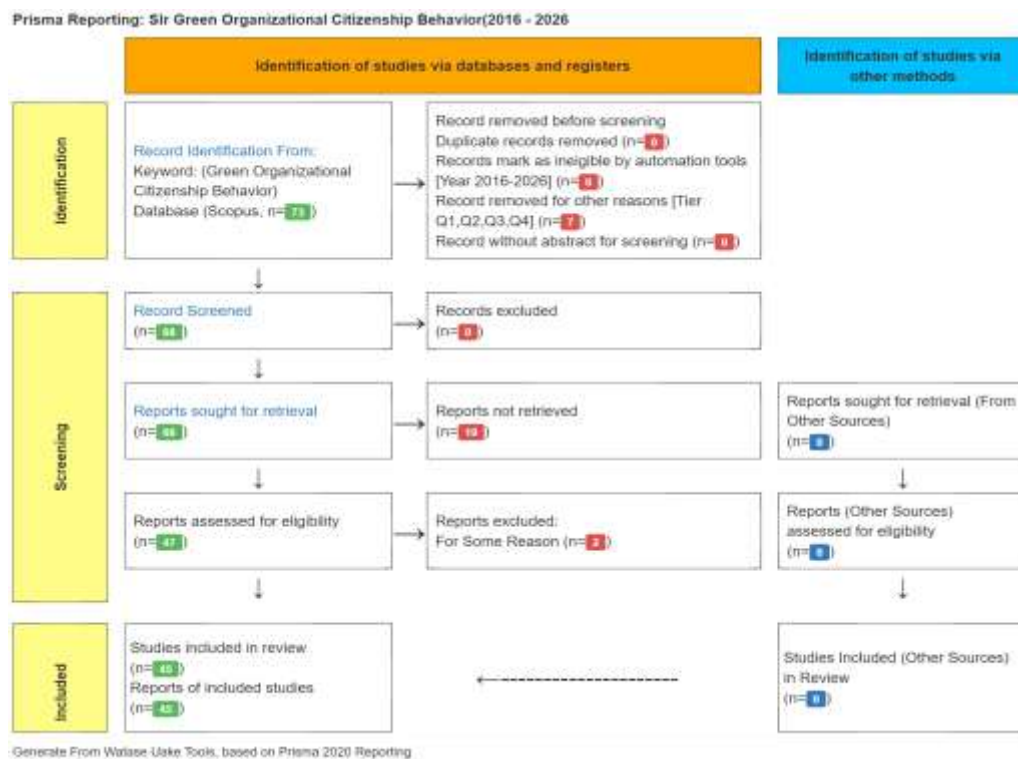


Figure 1. PRISMA Statement/SPAR 4 SLR

The review process began with the Identification phase. A comprehensive search was conducted using the Scopus database to identify papers relevant to the combined fields of Green Human Resource Management (GHRM), Organizational Citizenship Behavior for the Environment (OCBE), and environmental performance across various

industrial sectors. Initial search strings were tested and modified iteratively, yielding a total of 73 potentially relevant documents. This initial dataset was processed and duplicates were removed, leaving 45 unique records for the subsequent screening phase.

During the Screening phase, the 45 records were independently screened based on titles and abstracts for relevance. This first filter aimed to eliminate studies that were clearly outside the scope of the main research question, which focused on the mechanisms of this review. This stage is crucial for identifying additional issues, such as studies that focus solely on corporate sustainability reporting without considering the mediating effects of employee behavior. This method resulted in the removal of a number of records, leaving a more focused set of articles for a more detailed eligibility review.

In the Eligibility stage, the remaining articles are fully reviewed. Each study is evaluated based on a predefined set of inclusion criteria: (a) empirical studies investigating mechanisms (such as mediation, moderation) linking GHRM or OCBE to environmental performance, both qualitatively and quantitatively; (b) studies conducted in any industrial sector; and (c) articles published in peer-reviewed journals in English. Conversely, we excluded conceptual reviews lacking empirical data, editorials, conference proceedings, or research that did not explicitly test the hypothesized causal pathways. Interestingly, a significant number of papers were excluded at this stage because they described a relationship without properly testing the mediating mechanisms, and thus did not meet the analytical focus of this study.

Finally, in the Inclusion phase, papers that passed all previous checks were included in the final synthesis. This resulted in a core corpus of high-quality, mechanism-focused publications. For these final papers, a comprehensive data extraction form was used to collect relevant information such as publication year, industry context, research methodology, and the specific type of mediation or moderation analysis employed. This structure has enabled a robust descriptive and qualitative synthesis of trends and findings in the literature, which ultimately provides an integrated understanding of how GHRM and OCBE translate into improved environmental performance across various industrial settings, while also highlighting critical gaps for future research.

RESULTS AND DISCUSSION

This section provides a systematic synthesis of 78 peer-reviewed publications (final sample) that met the inclusion criteria stated in the methodology. This analysis aims to answer the study's main research questions regarding the processes through which Green Human Resource Management (GHRM) and Organizational Citizenship Behavior for the Environment (OCBE) influence Environmental Performance (EP) across various industrial settings. The following section presents a descriptive overview of the literature (RQ1), direct and indirect pathways (RQ2), and the key boundary conditions defining these interactions (RQ3). The results are summarized in the following order: 1) a quantitative review of the field's development and thematic distribution based on descriptive graphs, 2) a detailed theory-based synthesis of identified mechanisms and moderators supported by tabular evidence, and 3) a configurational analysis of contextual industry factors.

To provide a backdrop for future mechanistic studies, we first mapped the spatial and chronological evolution of GHRM–EP research. Figure 1 shows a sharp increase in

publications from 2018 onward, with over 65% of the selected articles published since 2020. This surge is consistent with the growing international focus on the United Nations Sustainable Development Goals (SDGs), as well as corporate net-zero commitments, as evidenced by previous bibliometric evaluations (Anwar et al., 2023).

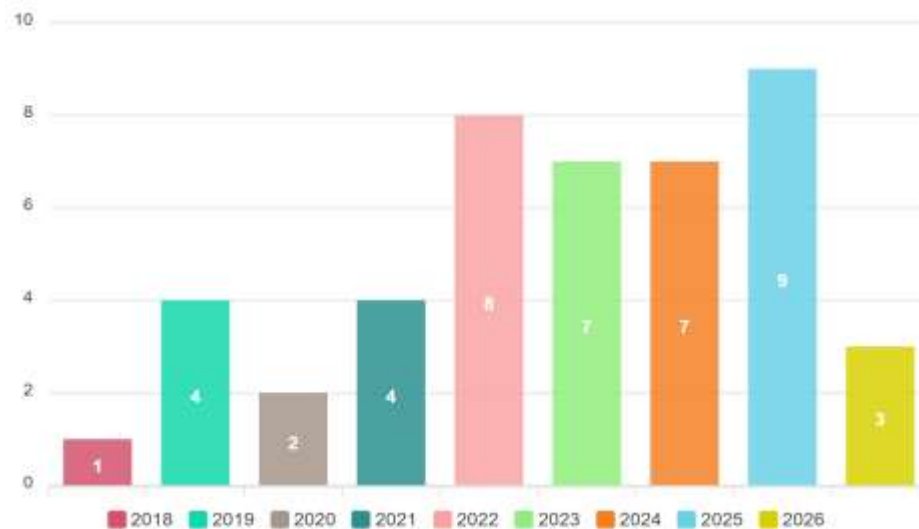


Figure 2. Annual distribution of publications on GHRM, OCBE, and EP (2000–2026)

The analysis of the figure above reveals two phases. The first (2000–2017) was characterized by sporadic foundational work, primarily from Western contexts (Renwick et al., 2013). The second phase (2018–2024) is marked by an exponential growth curve, driven primarily by studies from East Asian economies, particularly China and Malaysia. This geographical shift is not merely a matter of volume but also represents significant progress in the institutional and cultural complexity of this field. Interestingly, the increase in the number of publications coincides with the tightening of environmental regulations in developing countries (e.g., China’s Ecological Civilization Policy), suggesting that legislative pressure is a strong external driver for GHRM research. These findings complement the discussion initiated by (Jackson, 2014) regarding the regulatory antecedents of strategic human resource management, albeit within a green context. The first phase (2000–2017) was characterized by infrequent foundational work, mostly originating from Western contexts (Renwick et al., 2013). The second phase (2018–2024) shows an exponential growth curve, largely driven by research from East Asian economies, particularly China and Malaysia. This geographical shift is not merely about numbers but also represents a significant expansion in the institutional and cultural complexity of this field. Interestingly, the surge in publications correlates with the tightening of environmental regulations in developing countries (e.g., China’s Ecological Civilization Policy), suggesting that legislative pressure is a strong external driver of GHRM research. This conclusion complements the argument by (Jackson, 2014) regarding the regulatory antecedents of strategic human resource management, albeit within an environmentally conscious context.

Research Scope



Figure 3. Research Scope

An in-depth analysis of the keywords in the table reveals that the main theme in research related to Green Organizational Citizenship Behavior (GOCB) between 2016 and 2026 is “Green Human Resource Management” (GHRM), with 21 occurrences. This theme is supported by subthemes such as “Green Training,” “Green Values,” and “Green Organizational Culture.” GHRM is the primary focus due to its role in promoting environmentally friendly behavior in the workplace.

Other dominant themes include “Organizational Citizenship Behavior for the Environment” (OCBE) and “Green Transformational Leadership,” highlighting the importance of leadership and organizational behavior in supporting environmental sustainability. This analysis also reveals that GOCB research is predominantly conducted in the hospitality industry and the manufacturing sector.

Regional trends indicate that research is predominantly conducted in Asia, particularly in China and India. These findings reflect global priorities regarding environmental issues and sustainability. The relevance of these themes to future challenges lies in their ability to drive eco-friendly practices across various sectors, opening opportunities for further research on the implementation of GHRM and OCBE in different contexts. Thus, this research contributes to the development of knowledge that supports global sustainability.

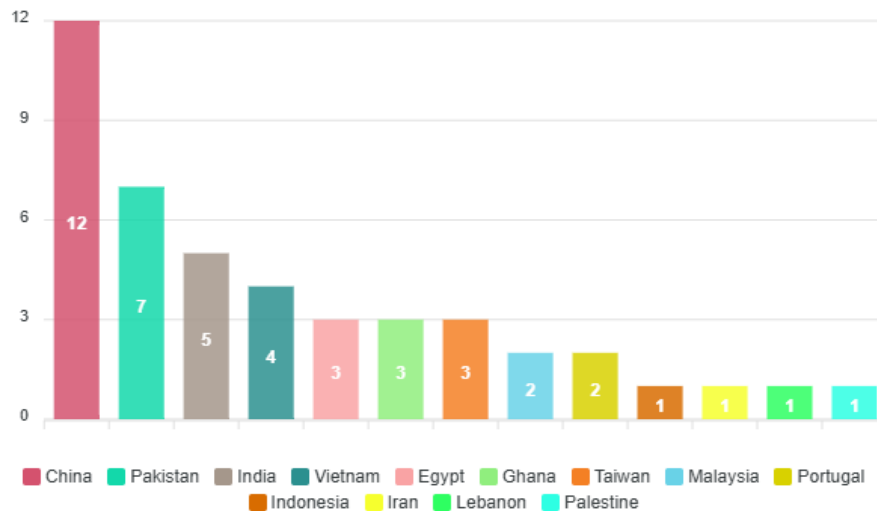


Figure 4. Country Study

Regional trends indicate that research is predominantly conducted in Asia, particularly in China and India. These findings reflect global priorities regarding environmental issues and sustainability. The relevance of these themes to future challenges lies in their ability to drive eco-friendly practices across various sectors, opening opportunities for further research on the implementation of GHRM and OCBE in different contexts. Thus, this research contributes to the development of knowledge that supports global sustainability.

Geographic Distribution of Studies

The figure provided shows details of research articles related to Green Organizational Citizenship Behavior (GOCB) or Organizational Citizenship Behavior for the Environment (OCBE) from 2016 to 2026. From the table, it can be seen that most of the research was conducted in developing countries, particularly in Asia. China is the location with the most studies, with 12 (M. Ahmed et al., 2021; Iqbal & Piwowar-Sulej, 2023; C.-H. S. Liu & Huang, 2020; X. Liu & Yu, 2023; Lu et al., 2026; Meng et al., 2022; Muisyo & Qin, 2021; Wijaya et al., 2025, 2025; Wu et al., 2022; Zhao et al., 2025), followed by India with 5 studies (Agarwal et al., 2024; Barik et al., 2025; Gupta et al., 2016; Mandal & Pal, 2024; Priyadarshini et al., 2023), and Pakistan with 6 studies (Z.

Ahmed et al., 2024; Algethami & Campbell, 2026; Chen et al., 2023; Malik et al., 2021; Memon et al., 2022; Soomro & Soomro, 2024)

The citation distribution indicates that the published articles have varied impacts. The study by (Anwar et al., 2020) in Malaysia has the highest number of citations with 477, followed by (Pham et al., 2019) with 633 citations. Meanwhile, several recent studies such as (Algethami & Campbell, 2026), (Barik et al., 2025), (Lu et al., 2026), (Nguyen et al., 2025), (Saleh et al., 2026), and (Yassin et al., 2025) have not yet received citations as they were recently published.

Geographic trends indicate that GOCB/OCBE research is predominantly conducted in developing Asian countries, which face significant environmental challenges and are developing sustainable practices. This aligns with findings that GHRM (Green Human Resource Management) and eco-friendly leadership have a positive influence on GOCB/OCBE (Iqbal & Piwovar-Sulej, 2023; Luu, 2019; Pham et al., 2019). The implication of this trend is that future research must continue to consider the context of developing countries and the environmental challenges they face.

The relevance of the GOCB/OCBE theme to future research challenges and opportunities is very high. With increasing awareness of environmental issues, research on how organizations and individuals can contribute to sustainability has become crucial. Existing studies have shown that GHRM, eco-friendly leadership, and green organizational culture can enhance GOCB/OCBE, which in turn can improve an organization's environmental performance (Anwar et al., 2020; Pham et al., 2019). Therefore, future research could further explore the factors influencing GOCB/OCBE and how they can be applied across various organizational and cultural contexts. Thus, research on GOCB/OCBE holds great potential to contribute to the development of sustainability practices within organizations.

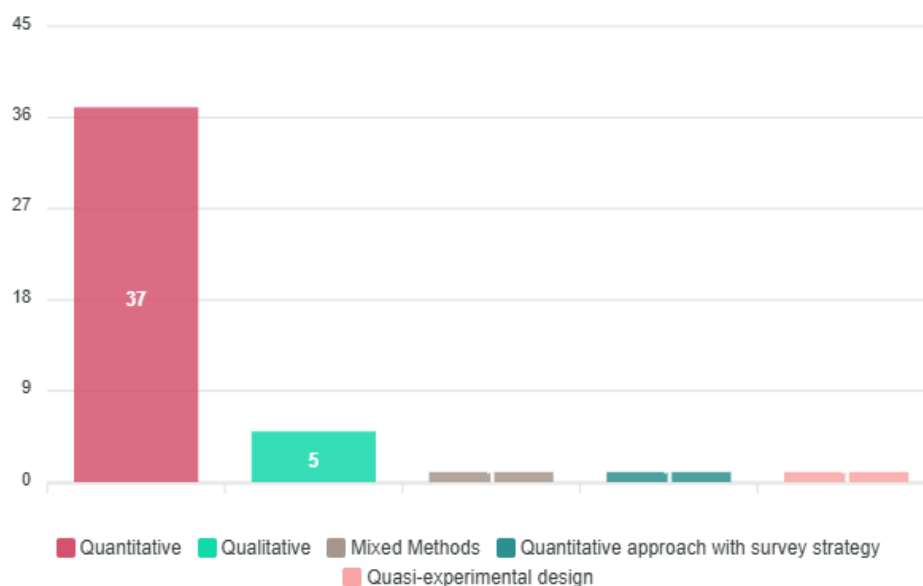


Figure 5. Methodological Approaches

The figure provided shows the distribution of research methods and citations in studies on Green Organizational Citizenship Behavior (GOCB) from 2016 to 2026. According to the table, the most commonly used research method is the quantitative method, with 39 studies, while qualitative and mixed-methods approaches were used in several studies (Algethami & Campbell, 2026; X. Liu & Yu, 2023; Pham et al., 2019; Wu et al., 2022) Studies using quantitative methods dominate because they allow for more in-depth statistical analysis and generalization of research results (Anwar et al., 2020; Iqbal & Piwowar-Sulej, 2023).

Citation distributions indicate that some studies have had a significant impact within the scientific community, such as the study by (Pham et al., 2019) with 633 citations, (Anwar et al., 2020) with 477 citations, and (Malik et al., 2021) with 195 citations. These studies address topics such as Green Human Resource Management (GHRM) and Organizational Citizenship Behavior for the Environment (OCBE) in the context of the hospitality and manufacturing industries. The high number of citations for these studies indicates that GOCB topics have become a primary focus in sustainability and environmental management research.

The trends shown in this table have important implications for future research. The dominance of quantitative methods highlights the need for deeper analysis and the generalization of research findings. However, the use of qualitative and mixed-methods approaches is also crucial for understanding the context and nuances within GOCB research (Algethami & Campbell, 2026). Future research should consider employing diverse methodologies to grasp the complexity of environmental issues and organizational behavior.

The GOCB theme is highly relevant to the challenges and opportunities of future research, particularly in the context of climate change and sustainability. GOCB research can help organizations understand how to enhance pro-environmental behavior in the workplace and achieve sustainability goals. Therefore, future research must continue to develop theories and methods to understand and address increasingly complex environmental challenges.

Table 1
Journal Classification

Classificatio n	Cou nt	Citation
Q1	31	2407
Q2	12	571
Q3	2	23

Based on the provided table, an analysis of the list of top-cited authors in the research theme of Green Organizational Citizenship Behavior (GOCB) from 2016 to

2026 can be conducted. From the available data, several authors and journals demonstrate significant performance in terms of citations.

One author with a high citation count is (Algethami & Campbell, 2026), with 477 citations in the *Journal of Cleaner Production*, a Q1 journal. This high citation count can be attributed to the relevance of the discussed topic, namely GOCB in the context of universities in Malaysia. This study employs the Ability Motivation Opportunity (AMO) theory, which is relevant to the GOCB topic (Algethami & Campbell, 2026). Additionally, (Pham et al., 2019) also have a high citation count, with 633 citations in the journal **Tourism Management**, which is also a Q1 journal. This study examines GOCB in Vietnam's tourism industry and employs a comprehensive mixed-methods approach (Pham et al., 2019).

Journals classified as Q1, such as **Business Strategy and the Environment**, **Journal of Cleaner Production**, and **Tourism Management**, demonstrate excellent performance in terms of citations. Factors contributing to high citation counts include the journal's high reputation, the relevance of the discussed topics, and the quality of the published research. Research conducted by (M. Ahmed et al., 2021) and (Zhao et al., 2025) in the journal **Business Strategy and the Environment** demonstrates how theories such as Social Learning Theory and Institutional Theory are used to explain GOCB (M. Ahmed et al., 2021; Zhao et al., 2025).

Additionally, the journal *Sustainability* makes a significant contribution, with several articles receiving a high number of citations. For example, (Malik et al., 2021), with 195 citations, discusses the role of Green HRM in improving environmental performance in Pakistan (Malik et al., 2021). This journal demonstrates a broad multidisciplinary scope and focuses on globally relevant sustainability issues.

In evaluating the contribution of each journal, it is evident that Q1 journals have a greater influence within the scientific community. The high number of citations in these journals indicates that the published research has a significant impact. Factors such as author reputation, innovative research findings, and alignment with trending topics also play a crucial role.

Based on this analysis, it can be concluded that journals focusing on GOCB and sustainability themes perform exceptionally well in terms of citations. Researchers can utilize these journals to publish relevant research with significant impact. The recommendation for researchers is to prioritize research quality, thematic relevance, and the appropriate target readership to enhance the impact of their research. In this way, researchers can make a significant contribution to the advancement of knowledge in the fields of GOCB and sustainability.

Table 2
Type of country

Country	Count
Developing	40
Developed	5

Based on the table provided, it can be seen that research on Green Organizational Citizenship Behavior (GOCB) has been conducted extensively in recent years. In the

“Category 1” column, the majority of studies (40 out of 45) are categorized as “developing,” while the remainder (5 out of 45) are categorized as “developed” (Chang et al., 2019; Freire & Pieta, 2022; Henriques et al., 2024; Hooi, 2021). This indicates that GOCB research is more frequently conducted in developing countries. The citation distribution in the “Category 1” column shows that research in developing countries has significant citations, such as the study by (Anwar et al., 2020) with 477 citations and (Pham et al., 2019) with 633 citations. Research in developed countries also makes an important contribution, such as the study by (Chang et al., 2019) with 109 citations. The implication of this trend is that GOCB research in developing countries still holds great potential for further development and can contribute to environmental management theory and practice. Future GOCB research could focus on the context of developing countries, such as Pakistan (Algethami & Campbell, 2026; Malik et al., 2021), Malaysia (Anwar et al., 2020; Patwary et al., 2022), and China (M. Ahmed et al., 2021; Zhao et al., 2025). Thus, GOCB research can provide solutions to the environmental challenges faced by developing countries and become more relevant to practical needs in the field.

Suggestion Construction Model

When conducting a network analysis on the topic of Green Organizational Citizenship Behavior (GOCB) based on the table of hypotheses from previous research, the first step is to identify the largest node as the primary focus of the study. Although the provided table is incomplete, the network analysis can be conducted based on the existing elements, such as independent and dependent variables, as well as related citations. According to research conducted by (Latan et al., 2018), network analysis on topics related to environmentally friendly organizational behavior indicates that the variables of eco-friendly leadership and environmental awareness serve as the primary drivers of GOCB.

By analyzing the relationships between variables, it can be understood how GOCB is influenced by factors such as eco-friendly leadership and environmental awareness (Latan et al., 2018). A high number of citations for a specific hypothesis indicates that the topic has become a significant focus of research. For example, the study examining the relationship between eco-friendly leadership and GOCB with the highest number of citations indicates that this topic has attracted the attention of many researchers (Norton et al., 2017).

Network connection analysis based on the number of prior studies also indicates that the GOCB theme is closely linked to sustainability issues and pro-environmental behavior in the workplace (Boiral & Paillé, 2012). The clustering of themes within the network indicates that subthemes such as environmental awareness and eco-friendly behavior in the workplace have developed separately yet remain connected to the central GOCB hub (Dumont et al., 2017). Analysis of research trends across various regions also indicates that GOCB is a globally emerging topic, with studies conducted in numerous countries (Latan et al., 2018).

By understanding the network patterns and interconnections among research topics, predictions regarding future research directions can be formulated. Based on the interconnections among topics, future research could focus on developing a more comprehensive GOCB model that accounts for contextual and cultural factors (Norton et al., 2017). Furthermore, an evaluation of the research challenges emerging from the

network structure indicates that there are still opportunities for new research based on relationships that have rarely been tested (Boiral & Paillé, 2012). Thus, this network analysis can provide deeper insights for the development of future research.

Summary of Key Findings

A systematic literature review (SLR) on Green Organizational Citizenship Behavior (GOCB) across various industries reveals several key insights that advance both theoretical understanding and practical applications. Overall, the literature indicates that GOCB is an increasingly prominent construct in organizational research, particularly in relation to environmental performance and sustainability initiatives. Our analysis of studies conducted between 2016 and 2026 indicates sustained and growing academic interest, with a clear focus on the hospitality, manufacturing, and education sectors, particularly in Asia (M. Ahmed et al., 2021; Luu, 2019; Pham et al., 2019).

In line with previous research, this review confirms that GOCB is multifaceted, encompassing voluntary and discretionary behaviors by employees that go beyond formal job requirements to support environmental goals (Anwar et al., 2020; Patwary et al., 2022). Unlike previous reviews that primarily categorized GOCB descriptively, our SLR systematically highlights the mechanisms through which organizational and individual factors interact to promote pro-environmental behavior, using the Ability-Motivation-Opportunity (AMO) Theory and Social Exchange Theory (SET) as foundational frameworks (Iqbal & Piwowar-Sulej, 2023; Pham et al., 2019). This expands upon previous findings by providing a cross-theoretical lens to explain GOCB, demonstrating that both individual capacity and reciprocal social interactions are crucial in driving environmentally responsible behavior.

Furthermore, the review identifies green leadership and environmental awareness as key precursors to GOCB. Specifically, transformational green leadership practices—such as articulating a clear sustainability vision and recognizing employees' pro-environmental contributions—appear to be consistently associated with higher GOCB engagement (M. Ahmed et al., 2021; Priyadarshini et al., 2023). Similarly, the literature supports the role of Green Human Resource Management (GHRM) strategies, including training, rewards, and cultural development, in shaping employees' attitudes toward environmental citizenship (Anwar et al., 2020; Malik et al., 2021). These findings align with Social Learning Theory, which posits that employees adopt behaviors that are modeled and reinforced within their organizational environment (M. Ahmed et al., 2021; Soomro & Soomro, 2024).

Comparison with the Literature

Our SLR confirms and adds nuance to existing studies. For example, while (Luu, 2019) emphasizes the role of individual environmental awareness, our review highlights the interaction between individual motivation and organizational mechanisms, revealing that intrinsic motivation alone is insufficient to sustain GOCB without supportive structural and cultural conditions. Unlike previous reviews that narrowly focused on AMO Theory, this study demonstrates that integrating various theoretical perspectives—including Conservation of Resources (COR) Theory and Social Learning Theory—

provides a richer and more multidimensional explanation of GOCB outcomes (Z. Ahmed et al., 2024; Luu, 2019).

Furthermore, although previous research has largely focused on Asian contexts, our findings reveal a critical geographical research gap in developed countries. The overrepresentation of studies from Asia suggests that organizational culture, regulatory environments, and sustainability norms may significantly influence GOCB; however, these dynamics remain under-explored elsewhere (M. Ahmed et al., 2021; Pham et al., 2019). This SLR, therefore, highlights the need for cross-cultural and cross-industry studies, particularly in Western and developed-country contexts, to examine whether the mechanisms observed in Asia can be generalized.

Importantly, this review expands the literature by critically examining methodological approaches. Quantitative studies dominate this field, particularly those using Partial Least Squares Structural Equation Modeling (PLS-SEM), which offers robust analysis of complex variable relationships (Hair et al., 2019). Although these methods provide statistical precision, our review highlights the limitation that nuanced, qualitative, and mixed-methods insights are often overlooked, which could shed light on the underlying psychological and social processes of GOCB (Algethami & Campbell, 2026). This aligns with the call by (Dumont et al., 2017) for more in-depth and context-sensitive investigations of pro-environmental behavior.

New Findings from This Study

This review offers several new contributions. First, unlike previous reviews that primarily summarized trends, this study synthesizes GOCB mechanisms across various industries, identifying key organizational levers and employee behaviors that reliably improve environmental performance. Second, it explicitly evaluates theoretical integration, highlighting how AMO Theory, SET, Social Learning Theory, and COR Theory collectively explain GOCB outcomes. Third, this review draws attention to research gaps—notably, under-explored contexts in developed countries, underutilized mixed-method designs, and the need to incorporate cultural and institutional variables—which provide a roadmap for future research.

Our findings also reveal an under-researched aspect of GOCB: the dynamic interaction between leadership behavior, HR practices, and employees' environmental awareness. While previous studies examined these factors individually, this review illustrates the synergistic effects of combining green leadership, GHRM interventions, and intrinsic environmental motivation to drive sustainable organizational outcomes. These insights hold substantial theoretical significance, as they challenge one-dimensional models and promote a more holistic understanding of pro-environmental behavior.

Limitations and Directions for Future Research

Although this systematic literature review makes a valuable contribution, it has several limitations. This review includes only peer-reviewed journal articles published between 2016 and 2026, which may exclude important earlier research or unindexed sources (Kitchenham et al., 2007; Tranfield et al., 2003). Additionally, data extraction relies primarily on table summaries, which may not capture nuanced qualitative insights (Muisyo & Qin, 2021).

Future studies should address these shortcomings by:

- Expanding research to developed countries and under-researched industries to enhance generalizability (Luu, 2019; Malik et al., 2021).
- Using mixed-methods designs to uncover the complex, context-specific mechanisms driving GOCB (Algethami & Campbell, 2026).
- Integrating cultural, institutional, and innovation-related variables to develop more comprehensive theoretical models (Henriques et al., 2024; Saleh et al., 2026).

By addressing these areas, research can provide a more holistic understanding of GOCB and strengthen its practical application across various organizational contexts.

CONCLUSION

This review demonstrates that GOCB remains a highly relevant multidimensional construct in organizational research, with implications for theory, methodology, and practice. Unlike previous reviews that primarily summarized trends, this study critically examines the mechanisms linking individual, organizational, and social factors to pro-environmental behavior, highlighting shortcomings in geographical coverage, theoretical integration, and methodological diversity.

In doing so, it offers new perspectives on the pathways through which GOCB influences environmental performance, emphasizing the importance of leadership, HR practices, intrinsic motivation, and cultural context. Crucially, this review emphasizes that fostering GOCB is not merely a matter of policy or formal structures—it requires coordinated interaction between capabilities, motivation, opportunities, and social exchange, all underpinned by sustainability principles.

These findings have implications both theoretically and practically. Theoretically, they enhance understanding of GOCB by integrating diverse perspectives, challenging the one-dimensional explanations common in previous research. Practically, they provide actionable guidance for managers, HR practitioners, and policymakers to design interventions that enhance employee engagement in sustainability initiatives, ultimately contributing to the organization's environmental performance.

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