Influence of Green Competence on Employee Pro-environmental Behaviors and Sustainable Performance: The Mediating Role of Top Management Support

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Abstract. This study examines the impact of green competence (GC) on corporate sustainable performance (CSP) and green organizational citizenship behavior (green OCB), both directly and through the mediating influence of top management support (TMS). A two-phase quantitative methodology was employed: a pilot study was conducted to refine measurement scales, followed by a primary survey of 400 employees across diverse industries in Vietnam. Data were analyzed using SPSS 26.0 and SmartPLS 3.0 to test the proposed hypotheses. The findings reveal that GC is a significant predictor of TMS, which subsequently enhances both green OCB and CSP. These results underscore the critical importance of investing in environmental competency development and fostering proactive leadership to drive organizational sustainability and employee engagement. This research contributes to the sustainable Human Resource Management (HRM) literature by clarifying the mediating mechanisms linking environmental capabilities with behavioral and performance outcomes. Furthermore, the findings offer practical insights for organizations seeking to align their operations with international environmental standards and long-term ecological responsibility frameworks.

Keywords: Green competence, Top management support, Green organizational citizenship behavior, Corporate sustainable performance.

1 Introduction

Sustainable development has become a global priority, especially after environmental crises such as Typhoon Yagi in 2024, which caused an estimated 1.6 billion US dollar in damage in Vietnam [1]. Current global exigencies have accelerated the institutionalization of sustainability norms within corporate governance. Organizations are increasingly compelled to adhere to a multi-tiered regulatory landscape, governed by both overarching international goals and specific, legally-binding regional directives

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R. Hurriyati et al. (eds.), *Proceedings of the 10th Global Conference on Business, Management, and Entrepreneurship (GCBME 2025)*, Advances in Economics, Business and Management Research 407,
https://doi.org/10.2991/978-94-6239-819-1_86

concerning climate transparency and reporting. In this context, Vietnamese enterprises—both green-native and transitioning—face growing expectations to not only adapt to green transformation but also demonstrate measurable sustainability outcomes. Two critical indicators of an organization's sustainable success are corporate sustainable performance (CSP) and green organizational citizenship behavior (green OCB). CSP reflects a firm's long-term viability across environmental, social, and economic dimensions, while green OCB fosters an internal culture of proactivity, cooperation, and commitment—key enablers of sustainability initiatives. Although existing literature has explored several drivers of CSP and green OCB—such as green Human Resource Management (green HRM) practices [2], environmental leadership [3], or organizational climate [4]—these studies often treat these drivers in isolation and overlook the role of individual green competence (GC) in initiating broader organizational change.

Furthermore, most prior studies focus on direct effects or simple mediation paths, neglecting the potential multi-layered mechanisms by which GC operates through top management support (TMS) and behavioral outcomes like green OCB [5], [6]. From a practical standpoint, our preliminary observations in Vietnamese companies show that while some employees demonstrate high environmental awareness and skill, the lack of top-level support often prevents these competencies from translating into concrete sustainability outcomes or fostering collective green behavior. This disconnect suggests that individual competence alone is insufficient without organizational reinforcement.

To address these theoretical and practical gaps, this study draws on the Ability–Motivation–Opportunity (AMO) framework, Social Exchange Theory (SET), and the Resource-Based View (RBV) to assesses the direct influence of green competence on both CSP and green OCB. Additionally, it investigates the mediating role of top management support as a key factor in driving these relationships. By focusing on both behavioral and performance outcomes, this research develops a multi-level model that links individual capability, managerial support, and sustainability impact. Although the empirical data are drawn from the Vietnamese context, the proposed framework offers broader implications for green HRM strategies across diverse organizational and cultural settings.

2 Theory and Hypotheses

2.1 Literature Review

GC is conceptualized as a multidimensional individual capability encompassing green knowledge, skills, attitudes, awareness, abilities, and behavior [6]. Aligned with the Resource-Based View theory [7], GC serve as a strategic cornerstone for firms to navigate environmental pressures and fortify their long-term competitive standing. Despite growing interest in GC, most empirical studies are concentrated in Western contexts, with limited evidence from Southeast Asia—where regulatory shifts and organizational practices are evolving rapidly. Furthermore, the transformation of individual green

competencies into broader organizational outcomes remains underexplored, especially through leadership and behavioral mechanisms.

The involvement of senior leadership acts as a pivotal catalyst, driving the organizational shift toward sustainable practices. According to the JD-R model [8], TMS is a key organizational resource that enables employees to engage in sustainable actions by providing clear direction, adequate resources, and symbolic leadership. RBV further reinforces this view by positioning senior leadership commitment as an enabling capability for strategic change, especially in environmental contexts [9]. Prior studies have shown that visible leadership support enhances employee motivation and reduces resistance to change [10], allowing sustainability initiatives to be implemented more effectively. However, in many organizations, particularly in Vietnam, the lack of consistent TMS hinders the translation of green capabilities into sustainable performance outcomes.

Organizational Citizenship Behavior represents another crucial pathway through which GC can exert influence. Traditionally defined as discretionary behaviors that support organizational functioning [11], green OCB has evolved to include sustainability-oriented actions such as assisting colleagues with green tasks or participating in workplace environmental programs [12]. Drawing on SET [13] and Self-Determination Theory [14], green OCB is seen as a reciprocated response to supportive leadership and autonomy-enhancing environments. A robust perception of executive commitment encourages staff to go beyond their formal job descriptions, fostering pro-environmental citizenship behaviors that harmonize with the firm's ecological ambitions, reinforcing the behavioral aspect of green transformation.

Corporate Sustainable Performance reflects an organization’s long-term success across economic, social, and environmental dimensions, consistent with the Triple Bottom Line framework [15]. Achieving CSP requires more than strategic intent—it demands the integration of individual capabilities, leadership commitment, and organizational behavior. While past studies have identified green HRM practices, green innovation, and stakeholder management as contributors to CSP [16], [17], the specific role of GC and the mediating influence of TMS remain under-investigated. In contexts with emerging sustainability policies, like Vietnam, this link is especially relevant, as organizations face increased pressure to comply with global frameworks such as the SDGs and CSRD.

Collectively, this study integrates insights from RBV, AMO theory [18], JD-R, Social Exchange to develop a conceptual framework in which GC influences CSP and green OCB through the mediating role of TMS. By focusing on this mediation pathway, the study addresses several gaps: the lack of multilevel mediation analysis, limited evidence from developing economies, and the need to better understand how individual competencies interact with organizational structures to produce sustainable outcomes. This framework contributes to advancing the theoretical foundation of green HRM and offers practical guidance for fostering sustainability through employee capability and leadership support.

Given the theoretical foundations above, this study proposes a complete mediation framework where green competencies require organizational enablement to manifest into performance outcomes. Drawing from the AMO model, while employees may

possess the ability (GC) and motivation to contribute to sustainability, they lack the opportunity without top management's resource allocation and strategic support. This theoretical logic suggests that GC influences CSP and green OCB entirely through TMS rather than through direct pathways, as individual competencies need organizational amplification to achieve corporate-level impacts.

2.2 Hypotheses Formulation

Green competence, as a strategic human resource under the RBV [7], enhances sustainability when supported by enabling conditions. Drawing on the AMO theory [18], GC contributes to outcomes when employees are provided with support—here represented by TMS. Prior research [19] confirms that GC positively influences TMS, which in turn drives CSP through strategic alignment and resource allocation [20].

H1: GC influences TMS

H2: TMS influences CSP

H3: TMS mediates the relationship between GC and CSP

From the JD-R model [8], TMS acts as a key organizational resource, encouraging employees to engage in discretionary behaviors like green OCB. Social Exchange Theory [13] supports this view, suggesting that perceived leadership support fosters reciprocal, voluntary actions that benefit the organization. Although TMS and CSP are widely studied, the behavioral pathway via green OCB remains underexplored, especially in sustainability contexts. Although there is limited research providing direct evidence of the relationship between GC and green OCB, based on social exchange theory, we propose that TMS plays a pivotal role in transforming employees' green competencies into green OCB. Specifically, when employees demonstrate high green competence, this attracts attention and support from top management, and it is precisely this support that motivates employees to engage in green OCB.

H4: TMS influences green OCB

H5: TMS mediates the relationship between GC and green OCB

2.3 Research model

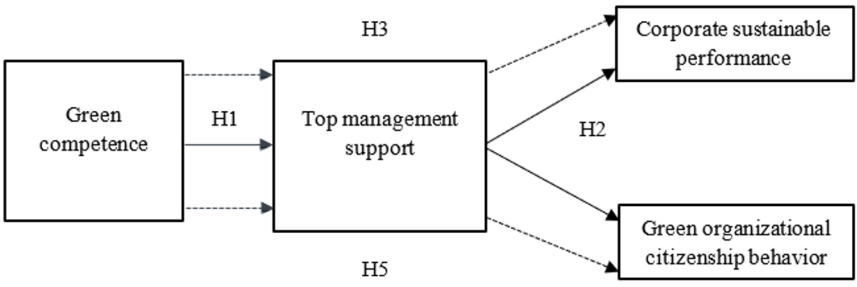

Fig. 1. Research model

3 Methodology

The present study is a quantitative investigation conducted among enterprises operating in Ho Chi Minh City, Vietnam, aiming to examine the hypothesized relationships between green competence, top management support, green OCB, and corporate sustainable performance. These enterprises were selected to represent varying degrees of green transition—ranging from fully green to those in the process of transformation—ensuring diverse organizational profiles relevant to the study's objectives.

Participants completed a Google Forms-hosted survey, which was distributed using a non-probability sampling approach through various professional networking channels, LinkedIn connections, referrals from internship contacts, and direct outreach to employees working in various departments. This approach enabled the researcher to reach a heterogeneous group of respondents across different industries and organizational sizes.

A total of 400 responses were collected. After screening for completeness and validity, 384 responses were deemed usable for statistical analysis, yielding a final response rate of 96%, which is considered highly acceptable for social science research.

The questionnaire was structured into two main parts. The first part collected demographic information such as age, gender, education, department, and organizational tenure. The second part focused on the key constructs of the study: GC, TMS, CSP, green OCB. All measurement items were adapted from well-established scales in previous studies to ensure content validity. GC was measured based on the six-dimensional framework by Cabral and Dhar [23], including green knowledge, green skills, green abilities, green behavior, green attitude, and green awareness. TMS was assessed using items adapted from Dubey et al. [21] and Ye et al. [22], reflecting perceived support for green practices at the strategic level. Green OCB was measured with items adapted from Organ [24]. CSP was evaluated using indicators aligned with the Triple Bottom Line framework [15], adapted from Tomšič et al. [25] and Algarni et al. [26].

Constructs were evaluated using a five-point Likert-type scale, with anchors stretching from 1 (Strongly Disagree) to 5 (Strongly Agree). A pilot test was conducted with 8 participants to refine wording, and ensure clarity.

We employed SPSS 26.0 for preliminary analyses descriptive and reliability tests and SmartPLS 3.0 for variance-based SEM to validate the research hypotheses. This two-stage analytical approach allowed for the assessment of both measurement validity and the structural relationships among constructs.

4 Results and Discussion

4.1 Reliability and validity tests

We utilized SmartPLS 3.0 to rigorously validate the measurement model, ensuring that all constructs met the established criteria for reliability and empirical distinctiveness. All constructs demonstrated strong internal consistency, with Cronbach’s Alpha and Composite Reliability (CR) values exceeding the 0.70 threshold [27]. The Average

Variance Extracted (AVE) for each construct ranged from 0.551 to 0.718, indicating adequate convergent validity.

The model met the Fornell–Larcker criteria as the within-construct variance (square root of AVE) surpassed the inter-construct correlations. This, complemented by the HTMT ratio analysis, robustly supports the discriminant validity of the measurement model. All HTMT values were below 0.85, confirming discriminant validity [28]. Additionally, no multicollinearity concerns were observed as Variance Inflation Factors (VIF) ranged from 1.21 to 2.64, all below the critical value of 5.0.

4.2 Hypothesis Testing

We utilized the bootstrapping technique (10,000 iterations) to evaluate the structural relationships within the model, providing a precise estimation of path coefficients and their respective significance levels. The model's explanatory power was satisfactory, with $R^2 = 0.552$ for TMS, $R^2 = 0.396$ for green OCB, and $R^2 = 0.259$ for CSP, indicating moderate levels of variance explained [29]. The Stone-Geisser's Q^2 values for endogenous constructs were all above zero, demonstrating predictive relevance.

The structural model assessment provided robust empirical support for all proposed hypotheses. Specifically, Green Competence (GC) emerged as a significant predictor of Top Management Support (TMS) (H1: = 0.732, $p < 0.001$). In turn, TMS was found to exert a substantial influence on Corporate Sustainable Performance (CSP) (H2: = 0.509, $p < 0.001$) and Green OCB (H4: = 0.630, $p < 0.001$).

Furthermore, the mediation analysis substantiated the indirect pathways proposed in H3 and H5. The indirect effect of GC on CSP through TMS was positive and highly significant (H3: = 0.461, $p < 0.001$). Most notably, H5 was validated, illustrating that TMS effectively mediates the relationship between GC and Green OCB (= 0.372, $p < 0.001$). These findings underscore that the transition from green resources to organizational and individual outcomes is significantly channeled through the strategic support of top management."

4.3 Summary of Key Results

The model results confirm the central role of green competence as a driver of sustainable organizational outcomes, but emphasize that this influence is fully channeled through top management support and green OCB. TMS serves as an effective mechanism that translate individual-level competencies into organizational-level performance. The high significance of mediation further highlights the importance of aligned leadership and proactive employee behaviors in achieving sustainable corporate goals.

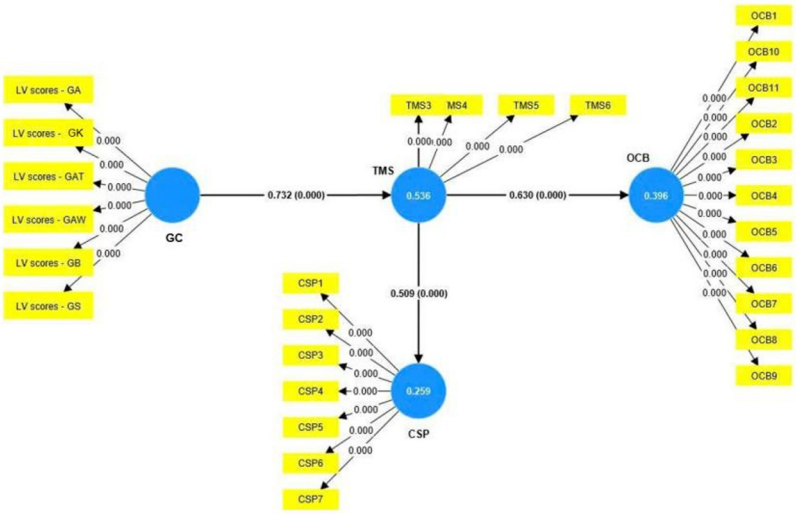

Fig. 2. PLS-SEM Structural Model Results

5 Conclusion and Implication

5.1 Conclusion

By designing and validating a robust research model, this study clarifies the mechanisms through which green competence (GC) enhances a firm's sustainable performance (CSP), with top management support (TMS) and green organizational citizenship behavior (green OCB) serving as mediators. Based on a sample of 384 valid responses from employees in Vietnamese enterprises undergoing green transformation, the study employed PLS-SEM analysis to assess the proposed hypotheses. The results confirmed the model's robustness and provided strong support for the theorized relationships.

Specifically, the analysis revealed that GC significantly predicts TMS ($\beta = 0.732$, $p < 0.001$), indicating that environmentally competent employees can catalyze leadership commitment to sustainability. TMS, in turn, positively influences green OCB ($\beta = 0.630$) and CSP ($\beta = 0.509$), demonstrating its dual role in promoting both behavioral engagement and performance outcomes.

5.2 Theoretical contributions

In terms of theoretical implications, the study extends existing frameworks such as the AMO model, RBV, and Job Demands–Resources (JD-R) theory by positioning green competence and top management support as central intangible resources that jointly influence corporate sustainable performance and green- oriented behaviors like geen-organizational citizenship behavior. The results highlight the critical role of TMS in

bridging individual capabilities with organizational-level outcomes, emphasizing that the transformation of GC into meaningful performance or behavioral outputs depends on managerial reinforcement and resource allocation. Accordingly, this research clarifies the intricate interplay between individual-level competencies and leadership dynamics. By doing so, it unveils the micro-foundations necessary for fostering sustainable organizational development, moving beyond broad generalizations.

5.3 Practical Implications

The findings underscore that green competence serves as a fundamental prerequisite for organizational sustainability. Therefore, firms striving to elevate their environmental performance should prioritize the cultivation of green skillsets among their workforce through structured training, environmental education, and awareness-building initiatives. However, GC alone is not sufficient. The study demonstrates that without visible and consistent support from top management, these competencies may remain underutilized or disconnected from the organization's strategic goals. Hence, leaders must actively champion green initiatives, commit resources, and create an enabling environment where sustainability is embedded in both vision and action. Furthermore, by fostering supportive work climates and encouraging voluntary pro-environmental behaviors, managers can stimulate green organizational citizenship behavior that aligns with long-term sustainability goals. This integrated approach—linking individual competencies, managerial action, and voluntary employee engagement—offers a practical pathway for organizations undergoing green transformation, particularly in emerging economies such as Vietnam, where sustainability is becoming both a market imperative and a regulatory expectation.

5.4 Study limitations

Despite providing valuable insights, the study's temporal limitations warrant consideration. Because a cross-sectional approach was employed, the observed relationships should be interpreted with caution regarding causality. Subsequent studies should adopt longitudinal perspectives to substantiate the developmental paths of GC, TMS, green OCB, and CSP and observe how these dynamics fluctuate over time. Future research may use objective performance indicators or data triangulation. Finally, other variables such as green innovation, employee engagement, or stakeholder pressure could be integrated to extend the model's explanatory power.

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