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The Role of Organizational Citizenship Behavior in Enhancing Supply Chain Performance and Achieving Corporate Sustainability

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Abstract

This paper explores, through empirical analysis, how various aspects of Organizational Citizenship Behavior (OCB) shape Supply Chain Performance (SCP) and, consequently, Corporate Sustainability (CS). Drawing upon Social Exchange Theory, a theoretical model is developed to explain how six OCB components—Civic Virtue, Organizational Loyalty, Courtesy, Helping Behavior, Sportsmanship, and Conscientiousness—affect SCP and indirectly contribute to CS outcomes. Using data from 441 professionals engaged in supply chain operations across multiple sectors, gathered via snowball sampling, the study applies Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 3.3.6. The analysis indicates that each OCB dimension exerts a meaningful and positive impact on SCP. Specifically, Civic Virtue, Loyalty, and Courtesy enhance cooperation and performance efficiency, Helping Behavior and Sportsmanship promote a collaborative atmosphere, while Conscientiousness reinforces procedural consistency. Additionally, SCP is found to significantly advance CS, confirming its intermediary function between OCB and sustainability success. These findings emphasize that cultivating OCB traits within organizations can strategically strengthen SCP and foster sustainable corporate development. The research enriches the literature with new empirical evidence on the interplay between OCB, SCP, and CS—an area seldom addressed in earlier studies.

Keywords: Supply Chain Performance, Organizational Citizenship Behavior, Corporate Sustainability, Social Exchange Theory, SmartPLS, PLS-SEM

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Introduction

As global markets evolve at an unprecedented pace, organizations are confronted with escalating pressures to remain agile, competitive, and sustainable. In this context, effective workforce management and talent retention have become vital, as the behavior and engagement of employees directly affect long-term success. Achieving sustainability no longer depends solely on optimizing internal operations; instead, firms must ensure that the entire supply chain (SC) performs efficiently and cohesively [1]. The modern marketplace demands that organizations excel in supply chain management (SCM) to sustain innovation, profitability, and responsiveness. According to Zhenjing *et al.* [2], Supply Chain Performance (SCP) is a decisive factor in translating organizational strategies into tangible outcomes and ensuring the consistent delivery of value.

From a managerial viewpoint, improving SCP represents one of the most enduring challenges companies encounter. It encompasses not only operational efficiency but also employee commitment and behavioral alignment with organizational objectives [3, 4]. Equally, the perception of an organization by its stakeholders significantly influences its competitive position. Firms that adhere to ethical practices and maintain consistent quality tend to strengthen customer loyalty and endure competitive pressures more effectively [5, 6]. An optimized SC system enhances performance through reduced waste, better

risk control, and creative problem-solving, which together form the foundation of sustainable growth [7-9] As Khan *et al.* [10] remind, true sustainability involves meeting current needs without restricting future generations from meeting theirs.

Developing a Sustainable Supply Chain (SSC) thus requires firms to expand capabilities while minimizing vulnerability to economic, environmental, and social risks [11]. SSCs are built upon competencies that enable efficient logistics while supporting broader sustainability objectives [12]. In industries such as property management, sustainable SC practices can significantly cut storage-related energy use and shorten delivery cycles [5, 10]. Within this framework, the Triple Bottom Line (TBL) principle promotes a holistic perspective in which economic, environmental, and social outcomes must progress in tandem [13]. Sustainable operations, therefore, depend on an organization's ability to balance profitability with environmental stewardship and social responsibility.

Nevertheless, external regulations alone cannot safeguard fairness or integrity in organizational behavior [14]. Informal, human-driven elements often shape whether sustainability goals succeed or fail [13]. One such behavioral mechanism is Organizational Citizenship Behavior (OCB), introduced by Organ [15], which describes voluntary and cooperative acts that enhance an organization's overall functioning without direct rewards. Although OCB has been linked to higher performance, greater retention, and proactive engagement, it also raises questions about equity and overcompliance. Since behavioral aspects play a critical role in how supply chains operate [16], understanding how these discretionary behaviors influence SCP and sustainability has become an essential academic concern [17].

Foundational contributions by Organ [15], Organ and Ryan [18], and Organ and Mackenzie [19] positioned OCB as a determinant of corporate success [13]. Despite extensive research connecting OCB to organizational performance [20-22], less attention has been given to how specific OCB dimensions affect SCP and, by extension, Corporate Sustainability (CS). Earlier investigations (e.g., Banwo & Du [23]; Thevanes & Harikaran [24]) largely examined OCB as a single construct, thus obscuring how individual behaviors—such as civic virtue, organizational loyalty, courtesy, helping behavior, sportsmanship, and conscientiousness—differently influence SC outcomes. While the interconnectedness of OCB, SCP, and performance has been acknowledged [17, 25, 26], empirical research exploring SCP's mediating effect between OCB and CS remains limited. This study seeks to fill that research void by exploring two guiding questions:

1. How do the distinct facets of OCB affect Corporate Sustainability?
2. To what degree does SCP serve as an intermediary in this relationship?

Accordingly, the study aims (1) to evaluate the influence of each OCB dimension on CS, and (2) to assess the mediating contribution of SCP. The next section elaborates on the theoretical underpinnings of the study and develops the associated hypotheses, followed by an overview of the research methodology, findings, and conclusions.

Theoretical Framework

Organ [15] defined Organizational Citizenship Behavior as "individual actions that are discretionary, not formally acknowledged by the organization's reward system, yet collectively facilitate its effective functioning." This conceptualization underscores that OCB stems from personal choice rather than obligation, emphasizing its indirect contribution to organizational performance. Later, Organ and Ryan [18] refined the concept, emphasizing the influence of OCB on the social and psychological climate of the workplace—how people interact, cooperate, and create a supportive environment. While the original definition centered on voluntariness and informal contribution, the revised perspective highlights the behavioral conditions that sustain teamwork and motivation.

OCB embodies actions beyond formal job duties—acts of courtesy, conscientiousness, and altruism that help colleagues and reinforce a cooperative culture [18]. Initially, Bateman and Organ [27] described OCB through two major forms: altruism, referring to helping behaviors, and compliance, later reframed as conscientiousness. In subsequent years, Organ [15] broadened the model by introducing civic virtue, courtesy, and sportsmanship, while later adding peacemaking and cheerleading to reflect positive interpersonal contributions [18].

Although later studies proposed more than thirty variants of OCB, conceptual overlaps have prompted efforts to consolidate them. Podsakoff *et al.* [28] grouped OCB manifestations into seven broader domains—helping behavior, sportsmanship, organizational loyalty, compliance, individual initiative, civic virtue, and self-development. Despite this variety, the five core elements identified by Organ [15]—altruism, conscientiousness, sportsmanship, courtesy, and civic virtue—remain dominant in empirical research [29]. The present investigation highlights six behavioral dimensions—civic virtue, organizational loyalty, courtesy, helping behavior, sportsmanship, and conscientiousness—as representative indicators of prosocial behavior that advance both organizational effectiveness and supply chain sustainability.

Performance, OCB, and sustainability

According to Brumbrach [30], performance represents the intersection of behavior and results—it transforms abstract intentions into measurable reality through action. The behavioral component, encompassing both mental and physical exertion, may be evaluated independently from final outcomes. Key indicators of performance include productivity, quality,

timeliness, cost efficiency, creativity, compliance with regulations, and even professional demeanor and appearance. Podsakoff *et al.* [29] identified a clear association between Organizational Citizenship Behavior (OCB) and Supply Chain Performance (SCP), reflected in improved efficiency, productivity, cost reduction, and customer satisfaction. Subsequent empirical studies [31, 32] have consistently confirmed this positive link, reinforcing OCB's role as a determinant of performance—a notion that continues to hold weight in modern scholarship [33].

The drive within organizations to meet goals effectively and efficiently is closely intertwined with OCB [34]. In supply chain contexts, employees' citizenship behaviors contribute to smoother coordination and higher operational performance. Practicing OCB's dimensions enables employees to find deeper meaning in their tasks, nurture belonging, and enhance motivation and productivity [35]. Organ [15] emphasized that OCB promotes SCP even though such behaviors often go unacknowledged by formal incentive systems. Nonetheless, OCB has been associated with improved supervisory appraisals and sustainable corporate outcomes [36].

Coblentz [37] contends that true sustainability depends on robust institutional, moral, and financial systems capable of addressing stakeholder needs. This entails a comprehensive integration of environmental, social, and economic domains [38]. Sustainable organizations, as noted by Linnenluecke and Griffiths [39], evolve through adaptive change and cultivate a culture of sustainability. Building organizational competence requires a process of collective and social learning [40], beginning with financial resilience—the cornerstone of talent retention and operational continuity. Ethical governance [41], corporate citizenship [13], and effective corporate oversight [42] all represent essential dimensions of this holistic sustainability paradigm.

Theoretical model and hypotheses development

This study's theoretical foundation is anchored in Social Exchange Theory (SET), widely acknowledged as the key explanatory lens for understanding OCB. SET posits that human interactions operate through the voluntary exchange of benefits and favors, forming relationships based on trust, reciprocity, and mutual reinforcement [43, 44]. Within the organizational context, employees display OCB as a reciprocation for the positive treatment and resources they receive from their employer [45]. Accordingly, the present study's conceptual model draws directly from SET, positioning OCB as a social response that fosters improved SCP and ultimately contributes to corporate sustainability (CS).

The academic interest in OCB's influence on organizational outcomes continues to grow for several reasons. If OCB demonstrably enhances key performance indicators, understanding its precise effects becomes essential for optimizing management strategies and human resource practices. However, despite the general assumption that OCB positively correlates with organizational success, evidence remains mixed. Podsakoff and MacKenzie [46], for instance, discovered that sales personnel who frequently assisted others inadvertently decreased their agencies' performance, suggesting that excessive citizenship behaviors can sometimes yield adverse effects. Similarly, Bolino and Turnley [47] observed that overcommitment to OCB may lead to job stress, work–life imbalance, and role overload. Thus, assessing OCB's dual effects—both beneficial and detrimental—enables a more nuanced understanding of its organizational value.

Managers must, therefore, discern which behavioral traits warrant recognition and reward, balancing OCB with task-related performance in decision-making. Grounded in social exchange principles, this study proposes a sequential linkage among OCB, SCP, and CS, emphasizing that behavioral reciprocity forms the basis for sustainable corporate performance. Over the past two decades, interdisciplinary research has expanded this theoretical approach, demonstrating its relevance across multiple organizational contexts [45].

Civic Virtue and SCP

Civic virtue embodies a proactive and responsible attitude toward the organization, reflected through employee engagement in its governance, vigilance toward external and internal challenges, and participation in decision-making processes. It manifests through behaviors such as attending meetings, reading organizational communications, contributing to policy discussions, and remaining informed about developments affecting the organization. It also encompasses acting in the organization's best interests, even when such actions entail personal sacrifice.

Empirical research indicates that civic virtue exerts a positive influence on employee performance [15, 28, 48, 49]. Nonetheless, Hazratian *et al.* [50] reported that this relationship is not always significant, suggesting that the connection between civic virtue and SCP may vary depending on contextual or industry-specific factors. This inconsistency justifies deeper exploration into how civic virtue affects supply chain outcomes.

H1: Civic Virtue is positively associated with SCP.

Organizational loyalty and SCP

The service-profit chain concept proposed by Heskett *et al.* [51] underscores that employee competence and commitment are vital for delivering superior service quality, satisfying customers, and strengthening Supply Chain Performance (SCP). This framework inspired subsequent research into how employee characteristics and customer behavior jointly shape SCP [52, 53].

Firms with motivated and loyal personnel tend to experience improved service delivery, stronger customer relations, and greater operational reliability.

Organizational loyalty entails employees defending their organization against external criticism, promoting its reputation, and maintaining dedication even in difficult circumstances [28]. As businesses increasingly recognize the value of a positive and cohesive workplace culture, loyalty emerges as a core driver of both productivity and performance [53]. In the context of the supply chain, loyal employees enhance coordination, stability, and trust—critical factors for achieving superior performance outcomes.

H2: Organizational loyalty has a positive effect on SCP.

Courtesy and SCP

Courtesy, one of the defining elements of OCB, captures behaviors rooted in consideration and respect for others. It involves anticipating potential issues, communicating proactively, and taking preventive measures to minimize conflict [54]. Hornibrook *et al.* [55] describe courtesy as thoughtful engagement—such as consulting relevant parties before decisions that could affect them. Similarly, Shanker [56] stresses that keeping colleagues informed about operational changes promotes preparedness and reduces workplace friction.

Sharma and Jain [57] argue that courteous acts, including offering timely updates, sharing requested information, and facilitating smooth collaboration, reflect civility and strengthen team cohesion. For instance, ensuring coworkers can reach an absent employee demonstrates both professionalism and respect. These behaviors foster smoother communication within supply chain operations, reduce disruptions, and improve overall performance efficiency.

H3: Courtesy positively influences SCP.

Helping behavior and SCP

Organ and Ryan [18] grouped altruism, peacekeeping, and cheerleading under the broader construct of helping behavior, encompassing voluntary acts like assisting new employees or mediating interpersonal disputes [19]. According to social categorization theory [58], shared demographic or psychological traits promote empathy and group solidarity, leading to more frequent helping behaviors.

Within the supply chain environment, trust among colleagues encourages cooperative problem-solving and knowledge sharing [59]. Such a climate enhances morale, job satisfaction, and employee retention—factors essential for maintaining consistent and reliable supply chain operations. Encouraging helping behaviors cultivates a supportive and communicative culture, reducing inefficiencies while improving teamwork and adaptability.

H4: Helping behavior has a significant positive relationship with SCP.

Sportsmanship and SCP

Ehtiyar *et al.* [60] define sportsmanship as the tendency to remain constructive and dedicated even when faced with difficulties or unfavorable conditions. Employees demonstrating sportsmanship handle setbacks without excessive complaint and strive to deliver their best work [57]. This trait reflects a willingness to tolerate minor frustrations, maintain optimism, and avoid negativity in the workplace [55].

Nielsen *et al.* [61] note that employees high in sportsmanship exhibit emotional resilience and prefer focusing on solutions rather than problems. Likewise, Ozturk [62] associates sportsmanship with a positive outlook and loyalty to the organization, even when challenges arise. Podsakoff *et al.* [28] further found that such behavior enhances team morale and lowers turnover rates.

Romaiha *et al.* [63] emphasize that employees with a future-oriented mindset tend to minimize complaints and view setbacks as opportunities for growth. Sportsmanship, therefore, reinforces a cooperative and stable workplace culture. Employees who refrain from gossip and negativity contribute directly to the efficiency and harmony of supply chain operations.

H5: Sportsmanship positively affects SCP.

Conscientiousness and SCP

In the context of OCB, conscientiousness represents an employee's commitment to exceeding the minimum standards of their role [55]. It involves dedication, punctuality, consistent attendance, and strict adherence to organizational policies [15]. Sharma and Jain [57] characterize conscientious employees as those who invest additional effort and time to enhance overall corporate performance.

These individuals exhibit strong personal responsibility, taking initiative to meet deadlines, avoid unnecessary absences, and comply with company regulations even without direct supervision [60, 63]. Yen and Niehoff [64] also highlight that conscientious employees remain updated with relevant knowledge, allowing them to perform efficiently and uphold operational standards.

Conscientiousness thus fosters disciplined, dependable, and proactive behaviors that directly enhance Supply Chain Performance, ensuring consistency and reliability in operations.

H6: Conscientiousness is positively and significantly associated with SC

The mediating role of SCP between OCB and CS

Organizational Citizenship Behavior (OCB) significantly contributes to strengthening Supply Chain Performance (SCP), which, in turn, has a profound effect on Corporate Sustainability (CS) [65]. OCB reflects voluntary, forward-looking actions undertaken by employees that go beyond their formal job requirements [63]. Demonstrating attributes such as civic virtue, loyalty, courtesy, helping behavior, sportsmanship, and conscientiousness nurtures a culture of collaboration and operational efficiency within the supply chain.

When employees consistently display OCB, coordination among supply chain units improves, bottlenecks are reduced, and innovation is stimulated. These advancements lead to higher process effectiveness and align closely with sustainable practices vital for an organization's long-term stability. Sustainable corporate success requires not only operational competence but also the ability to balance economic, social, and environmental considerations. Embedding OCB principles within supply chain management supports organizational adaptability, conflict resolution, and ethical conduct, thereby fostering both operational and sustainable excellence [25].

Enhanced SCP serves as a conduit through which OCB influences the sustainable orientation of an organization [26]. Sustainability outcomes depend on efficient resource utilization, waste minimization, and eco-friendly production and logistics—elements that emerge from a well-integrated supply chain [65]. Superior SCP facilitates environmentally responsible sourcing, manufacturing, and distribution processes while ensuring social accountability. Moreover, a resilient and adaptive supply chain enables organizations to navigate economic volatility and evolving environmental regulations, strengthening their long-term sustainability capacity [10].

In essence, SCP operates as a strategic link connecting employee citizenship behavior with corporate sustainability achievements. This relationship enhances both operational resilience and organizational reputation, supporting compliance with sustainability objectives and stakeholder expectations. Drawing on Social Exchange Theory, the integration of OCB, SCP, and CS forms a coherent framework explaining how behavioral and operational dynamics collectively drive sustainable outcomes [66].

H7: Supply Chain Performance mediates the relationship between Organizational Citizenship Behavior and Corporate Sustainability, such that OCB enhances SCP, which in turn contributes to the firm's sustainability performance.

Methodology

Population and sampling

This research adopts a quantitative design to empirically assess how SCP mediates the relationship between the dimensions of OCB and CS. The quantitative approach enables precise measurement, statistical validation, and the evaluation of relationships among the proposed constructs. Primary data were obtained from 441 professionals engaged in supply chain operations through an online questionnaire created using Google Forms. The survey aimed to verify the structural soundness, consistency, and empirical reliability of the proposed research model.

Given the lack of an established sampling frame and uncertainty about the total population, the study employed a non-probability snowball sampling technique. Initial respondents were contacted through professional networks and subsequently invited to share the survey with other supply chain experts across the country. This approach was particularly effective for accessing dispersed participants within specialized professional domains.

Sample adequacy was determined following the methodological guidance of Hair *et al.* [67] and Khan *et al.* [68], who recommend a 10:1 ratio of respondents to measurement indicators in multivariate analysis. Considering the presence of 8 latent variables and 43 observed indicators, the minimum required sample size was calculated as $10 \times 43 = 430$ participants. Thus, the collected 441 responses exceed the threshold, ensuring sufficient statistical power for robust model estimation and validation.

Questionnaire development and data collection

Following the methodological framework proposed by Saunders *et al.* [69], this study designed and validated a structured questionnaire to measure the variables under investigation. The measurement items were adapted from well-established scales and past studies [20, 23, 31, 35, 61, 63, 70]. A total of 43 items were evaluated using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). While the items were originally formulated in English, several were refined to better align with the study's objectives and contextual relevance.

To enhance the content validity and conceptual precision of the questionnaire, feedback was sought from academic experts and administrative professionals. Their insights were incorporated to ensure the items accurately represented the mediating

influence of Supply Chain Performance (SCP) between Organizational Citizenship Behavior (OCB) and Corporate Sustainability (CS). Minor revisions were subsequently made after analyzing the outcomes of a preliminary pilot test.

Expert validation and pilot testing confirmed the instrument's reliability and clarity. No personal or identifiable information was requested from participants to maintain confidentiality. The survey, administered between February and May 2024, received formal ethical clearance from the Ethics Review Committee of Abdul Wali Khan University Mardan. Each respondent provided written informed consent, acknowledging awareness of the research objectives, participation rights, and procedures.

Survey links were distributed through multiple communication channels, including email, Facebook, WhatsApp, LinkedIn, and other social media platforms. Each invitation included a cover letter outlining the study's purpose, anonymity assurances, and voluntary participation statement. Following three reminder notifications, 441 valid responses were collected. Interestingly, 26.98% of participants identified as female—significantly higher than the global average of 17% within the supply chain sector—highlighting increased female participation in logistics-related fields [71].

Descriptive statistics

To identify potential non-response bias, the approach proposed by Armstrong and Overton [72] was implemented. The responses from the earliest and latest 30% of participants were compared, treating late responders as non-respondents. Statistical analysis revealed no significant differences across manifest variables ($p > 0.25$), confirming the absence of response bias.

Normality tests were performed, and necessary adjustments were made to control for demographic variables such as gender, age, educational level, professional experience, job title, and supply chain specialization. All stages of data collection and analysis were conducted in Pakistan, and therefore, all responses originated from the same context.

The sample comprised 441 supply chain professionals, distributed across various roles: Supply Chain Managers (15.55%), Operations Managers (12.02%), Logistics Coordinators (13.38%), Procurement Specialists (19.27%), Warehouse Managers (13.83%), Supply Chain Researchers (15.87%), and Academics/Professors in Supply Chain Management (15.19%). The 25–34 age group represented the largest demographic segment (43.31%). Moreover, 27.89% held a master's degree, and 22.90% worked within the Technology and Electronics supply chain sector. Descriptive analyses—including mean, variance, standard deviation, frequency, skewness, and kurtosis—were performed to ensure data integrity (Appendix 1).

Analysis and Results

The study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM), a method frequently employed in organizational and management research due to its flexibility in analyzing complex relationships [73]. PLS-SEM is particularly effective when models involve multiple latent constructs and interrelated indicators. Accordingly, this study adopted a two-stage analytical approach, as recommended by Hair *et al.* [74], using SmartPLS software (version 3.3.6).

During the first stage, the measurement model was tested to ensure the reliability and validity of all constructs. The second stage involved examining the structural model to assess hypothesized relationships. The reliability of each construct was evaluated through Cronbach's alpha and Composite Reliability (CR), while the model's validity was verified using convergent and discriminant validity criteria. Only after these preconditions were satisfied was the structural model further examined.

Data normality was initially assessed using skewness and kurtosis statistics via SPSS, confirming acceptable normal distribution [75]. To ensure the dataset was free from multicollinearity, Variance Inflation Factor (VIF) scores were analyzed. Following Neter *et al.* [76] and Cfroteod [77], VIF values below 10 are acceptable; in this study, all variables exhibited VIF values under 3, demonstrating no multicollinearity concerns (Appendix 2).

Measurement model assessment

The explanatory power of endogenous constructs was evaluated using R-squared (R^2) and Adjusted R-squared (AR^2) statistics. As shown in **Table 2**, the endogenous variables exhibited moderate to strong explanatory capacity, indicating that the model effectively captures the relationships among key factors [78]. The close correspondence between R^2 and AR^2 values **(Table 3)** further confirms model consistency and reliability, implying a well-fitted structural framework [78].

Reliability of the measurement model

Unlike Cronbach's alpha, which assesses internal consistency, Composite Reliability (CR) provides a more comprehensive estimate of construct reliability. For exploratory research, CR values above 0.60 are considered acceptable, while values below this threshold suggest potential instability. As indicated in **Table 2**, Cronbach's alpha values surpassed the recommended cutoff, confirming internal consistency. Similarly, CR values exceeded the 0.70 criterion **(Table 1)**, validating the robustness and reliability of all constructs [78-80].

Table 1. Validity and reliability of the model

	R square	Adjusted *R* square	Cronbach's alpha	Composite reliability	Average variance extracted
Civic virtue			0.719	0.720	0.563
Organizational loyalty			0.792	0.790	0.544
Courtesy			0.766	0.824	0.551
Helping behavior			0.863	0.894	0.574
Sportsmanship			0.909	0.933	0.605
Conscientiousness			0.714	0.809	0.647
Supply chain performance	0.877	0.869	0.806	0.861	0.678
Corporate sustainability	0.427	0.421	0.859	0.894	0.635

Table 2. Evaluation of the correlation matrix using the Fornell–Larcker criteria

	1	2	3	4	5	6	7	8
1. Civic virtue	1							
2. Organizational loyalty	0.347**	1						
3. Courtesy	0.423**	0.463**	1					
4. Helping behavior	0.463**	0.487**	0.135*	1	.			
5. Sportsmanship	0.434**	0.379**	0.310**	0.381**	1			
6. Conscientiousness	0.475**	0.387**	0.319**	0.300**	0.241*	1		
7. Supply chain performance	0.374**	0.387**	0.387**	0.379**	0.379**	0.379**	1	
8. Corporate sustainability	0.388**	0.487**	0.588**	0.121*	0.389**	0.487**	0.418**	1

**Significant correlation exists at the 0.01 level (2-tailed)

Table 3. Evaluation of discriminant validity through the HTMT ratio

	1	2	3	4	5	6	7	8
1. Civic virtue	1							
2. Organizational loyalty	0.465	1						
3. Courtesy	0.800	0.356	1					
4. Helping behavior	0.418	0.810	0.374	1				
5. Sportsmanship	0.323	0.781	0.276	0.833	1			
6. Conscientiousness	0.491	0.491	0.320	0.480	0.423	1		
7. Supply chain performance	0.594	0.777	0.360	0.475	0.329	0.779	1	
8. Corporate sustainability	0.503	0.818	0.413	0.758	0.758	0.638	0.758	1

Model validity

A model's reliability is contingent upon its validity [81]. Accordingly, this study assessed both convergent and discriminant validity (DV) to ensure the robustness of the measurement model. Analysis revealed that all items had factor loadings above 0.70, while Average Variance Extracted (AVE) values for all constructs exceeded 0.50, consistent with Chin's [79] recommendations. These findings suggest strong coherence among observed indicators when evaluating the individual dimensions of each latent construct **(Table 1)**.

Discriminant validity was assessed using established approaches. One common method evaluates whether a construct accounts for more variance in its indicators than it shares with other constructs in the model [82]. In this study, a correlation matrix was computed using SPSS, with the square root of the AVE placed on the diagonal and inter-construct correlations below the diagonal. The square root of AVE for each construct exceeded its correlations with other constructs, confirming that all measurement items were distinct and suitable for structural model testing [74] **(Table 2)**.

Additionally, the Heterotrait–Monotrait (HTMT) ratio, recognized as the most rigorous discriminant validity criterion in PLS-SEM [83], was applied. All HTMT values were below the recommended threshold of 0.85 [84], indicating that discriminant validity was achieved and that the model is well-specified with no problematic overlap among constructs **(Table 3)**.

Predictive validity

The predictive capacity of the model was evaluated using the Stone-Geisser Q^2 statistic, which measures how well the model can predict endogenous constructs. According to Cohen [85], Q^2 values of 0.02, 0.15, and 0.35 correspond to small, medium, and large predictive relevance, respectively. As shown in **Table 4**, the Q^2 values for SCP (0.381) and CS (0.377) both exceed the threshold for large predictive relevance. These results indicate that the proposed model possesses substantial predictive power and that the included variables play a critical role in maintaining the structural integrity and explanatory capability of the framework.

Table 4. Predictive validity

	SSO	SSE	Q^2 (= 1 − SSE/SSO)

Civic virtue	2270.000	2270.000	–
Organizational loyalty	2600.00	2600.00	–
Courtesy	3500.000	3500.000	–
Helping behavior	4500.000	4500.000	–
Sportsmanship	1800.000	1800.000	–
Conscientiousness	1310.000	1310.000	–
Supply chain performance	–	–	0.381
Corporate sustainability	–	–	0.377

Evaluation of hypotheses

The study assessed the proposed relationships by calculating standardized beta coefficients with a 95% confidence interval and corresponding p-values to determine statistical significance. According to Khan *et al.* [78], relationships were considered significant when $p < 0.05$, indicating sufficient evidence to reject the null hypothesis.

Findings reveal that civic virtue significantly strengthens Supply Chain Performance (SCP) ($T = 5.167$, $p = 0.00$), confirming the validity of H1. Likewise, organizational loyalty demonstrates a robust positive impact on SCP ($T = 3.192$, $p = 0.002$), supporting H2. The data also suggest that courtesy meaningfully enhances SCP ($T = 2.519$, $p = 0.012$), providing empirical support for H3.

In addition, helping behavior was identified as a significant driver of SCP ($T = 2.034$, $p = 0.042$), validating H4, while sportsmanship contributes positively to SCP ($T = 2.795$, $p = 0.005$), confirming H5. Conscientiousness likewise shows a substantial positive relationship with SCP ($T = 3.405$, $p = 0.001$), supporting H6.

Crucially, the analysis highlights that SCP exerts a strong and significant effect on Corporate Sustainability (CS) ($T = 9.253$, $p = 0.00$), thereby confirming H7. These results collectively indicate that the various dimensions of Organizational Citizenship Behavior (OCB) play distinct but complementary roles in enhancing supply chain operations, which in turn drive sustainable outcomes for organizations **(Figure 2; Table 5)**.

Table 5. Path analysis utilizing bootstrapping

	Path coefficient	Sample mean	Std. deviation	*T* Statistics	*p* Values	Supported Yes or No
Civic virtue -> SCP (HI)	0.543	0.549	0.111	4.903	0.000	Yes
Organizational loyalty -> SCP (H2)	0.477	0.489	0.149	3.405	0.001	Yes
Courtesy -> SCP (H3)	−0.211	−0.213	0.084	2.519	0.012	Yes
Helping behavior -> SCP (H4)	0.202	0.190	0.099	2.034	0.042	Yes
Sportsmanship -> SCP (H5)	−0.428	−0.414	0.153	2.795	0.005	Yes
Conscientiousness -> SCP (H6)	0.271	0.278	0.080	3.405	0.001	Yes
SCP -> CS (H7)	0.656	0.667	0.071	9.253	0.000	Yes

Discussion and Conclusion

This study offers valuable insights into the complex relationships among Organizational Citizenship Behavior (OCB), Supply Chain Performance (SCP), and Corporate Sustainability (CS). The research aimed to examine how specific OCB dimensions relate to CS and to explore the mediating influence of SCP in this relationship. Data were collected from 441 SC professionals across diverse industries. Results indicate that all six OCB dimensions—civic virtue, organizational loyalty, courtesy, helping behavior, sportsmanship, and conscientiousness—exert a significant positive effect on SCP. Furthermore, SCP serves as a crucial intermediary through which OCB impacts corporate sustainability.

The primary objective was to understand how each OCB dimension affects CS and how SCP mediates these effects. To this end, a conceptual model was developed, positing both direct connections between individual OCB dimensions and SCP, as well as an indirect pathway linking OCB to CS via SCP. The empirical evidence confirmed that these relationships are substantial and positive. Each OCB component was shown to contribute meaningfully to SCP, demonstrating how discretionary behaviors enhance overall supply chain effectiveness.

Discussion

The findings highlight the significance of discretionary behaviors in driving supply chain efficiency. Actions associated with civic virtue, such as voluntarily assisting colleagues in resolving operational challenges, enhance workflow smoothness and adaptability within the supply chain. These behaviors help prevent bottlenecks, ensuring tasks are executed collaboratively and efficiently. Organizational loyalty fosters trust and commitment among supply chain members, promoting a cohesive and reliable network that supports long-term partnerships.

Courtesy emerges as a critical factor for minimizing misunderstandings and interpersonal conflicts. By encouraging polite and proactive communication, courtesy strengthens collaboration and aligns team efforts with organizational objectives.

Sportsmanship, reflecting resilience and a positive attitude in the face of setbacks, contributes to the stability and continuity of supply chain operations. It cultivates a culture of adaptability, allowing teams to navigate challenges without compromising performance. Conscientiousness, characterized by diligence and careful attention to detail, enhances task accuracy and resource management, further supporting operational efficiency.

The analysis also underscores the mediating role of SCP between OCB dimensions and CS. This indicates that the impact of OCB on sustainability is not only direct but also amplified through improvements in supply chain performance. For example, conscientious employees optimize processes, reduce waste, and ensure efficient resource utilization, directly advancing organizational sustainability objectives. Likewise, collaborative behaviors stemming from courtesy and helping actions foster a supportive work environment that reduces inefficiencies. This highlights SCP as a critical conduit linking employee behaviors with broader sustainability outcomes.

Finally, the results confirm a strong direct relationship between SCP and CS, emphasizing that efficient and resilient supply chains are essential for achieving sustainability goals. Optimized SCP enables firms to implement measures that reduce environmental impacts, maximize resource efficiency, and support social responsibility initiatives. Operational improvements, such as reduced lead times, enhanced inventory management, and streamlined processes, provide a foundation for long-term sustainable growth. These operational efficiencies not only improve customer satisfaction but also contribute to energy savings and waste reduction, illustrating the tangible benefits of aligning supply chain performance with corporate sustainability strategies.

Overall, the results corroborate the proposed conceptual framework, indicating that Organizational Citizenship Behavior (OCB) indirectly enhances Corporate Sustainability (CS) through improvements in Supply Chain Performance (SCP). Employees exhibiting civic virtue contribute to smoother operational flows, while those demonstrating organizational loyalty foster trust and cohesion among supply chain partners, enhancing efficiency. Courtesy minimizes friction and promotes seamless collaboration, whereas behaviors such as helping and cheering stimulate innovation and encourage the pursuit of sustainable solutions. Sportsmanship supports stability in supply chain operations during challenging periods, and conscientiousness ensures meticulous execution and operational precision. Collectively, these behaviors create a high-performing supply chain environment that underpins broader sustainability objectives.

This study extends prior research by integrating OCB, SCP, and CS into a single framework, highlighting the mediating function of SCP. While previous studies have established that OCB contributes positively to performance metrics such as efficiency, collaboration, and productivity, this research demonstrates how these behavioral practices are translated into tangible sustainability outcomes. Unlike conventional studies that emphasize technical or procedural aspects of sustainability, this work underscores the human behavioral drivers of supply chain performance and corporate sustainability, providing a more comprehensive perspective.

A distinguishing feature of this study is the detailed disaggregation of OCB into its constituent dimensions, allowing for nuanced insights into their individual effects on SCP and CS. Altruism and conscientiousness emerged as particularly influential, exhibiting stronger and more direct effects on supply chain performance and, subsequently, sustainability. Civic virtue behaviors, including assisting colleagues and streamlining processes, enhance team cohesion and operational efficiency, while conscientiousness ensures adherence to high standards and precision in execution. These findings suggest that organizations can strategically emphasize specific OCB elements in employee development programs to maximize contributions toward sustainability goals.

The foundational work of Organ [15], as well as Organ and colleagues [18, 19], posited that OCB plays a significant role in improving organizational efficiency and effectiveness. This proposition has been supported by empirical research, including studies by Bateman and Organ [27] and Smith *et al.* [86], which further explored the impacts of OCB on organizational outcomes. Literature reviews confirm that OCB influences a wide array of performance indicators, encompassing customer satisfaction, operational efficiency, profitability, service quality perceptions, environmental performance, and contextual performance, as demonstrated in studies by Smith and O'Sullivan [87], Daily *et al.* [88], Koys [89], Werner [90], Walz and Niehoff [91], and Podsakoff *et al.* [46].

Beyond operational impacts, internal collective behaviors associated with OCB also affect corporate-level factors, such as corporate social responsibility, governance, and financial performance. For example, Chun *et al.* [92] examined data from 3,821 employees across 130 Korean firms and found that collective organizational commitment and interpersonal OCB mediate the relationship between corporate ethics and financial performance, demonstrating the broader significance of these behaviors.

The discussion above emphasizes the multifaceted role of OCB in organizational life, showing its influence on financial performance, environmental outcomes, governance, and ethical practices. Several key observations emerge from this investigation. First, prior research has often overlooked OCB in the context of supply chain performance and corporate sustainability. Second, while many studies have examined OCB dimensions or SCP individually, very few have analyzed these factors together in an integrated framework. Third, previous literature has heavily relied on mathematical programming

approaches, such as multi-objective decision-making models, whereas the potential of social exchange theory to explain these dynamics has been largely neglected.

To address this gap, the present study applies social exchange theory to investigate how specific OCB dimensions—civic virtue, organizational loyalty, courtesy, helping behavior, sportsmanship, and conscientiousness—affect SCP and CS. To our knowledge, this is the first research effort to model these relationships using social exchange theory, providing a theoretical and empirical contribution that connects individual behaviors, operational performance, and corporate sustainability.

5.2. Theoretical Contributions

This study advances the current body of knowledge by offering empirical evidence on how Organizational Citizenship Behavior (OCB) influences Supply Chain Performance (SCP) and, in turn, Corporate Sustainability (CS). The findings underscore the strategic value of fostering OCB within organizations as a means to enhance supply chain efficiency and achieve long-term sustainability objectives. The contributions of this research can be viewed from both a general and a more focused perspective.

At a broader level, four key contributions emerge. First, OCB has been shown to strengthen organizational sustainability and overall effectiveness, a topic that has gained considerable attention in recent years [93]. By emphasizing employee behaviors, OCB recognizes staff members as essential drivers of organizational performance and operational efficiency [34]. This principle is equally applicable to the supply chain sector, which plays a critical role in national and global economic activities [94, 95]. Despite this importance, research examining the impact of OCB specifically on SCP and CS remains limited.

Second, OCB practices and their outcomes differ across cultures and organizational contexts [96]. There is a paucity of studies exploring OCB within the global supply chain domain, with most research focusing on sectors outside SCM. Understanding these dynamics within supply chains is therefore crucial for filling this knowledge gap.

Third, numerous meta-analyses have documented the extensive attention OCB has received in management literature [18, 97-102]. However, the majority of this work emphasizes the antecedents of OCB at individual or organizational levels. This study contributes by shifting focus toward the outcomes of OCB, specifically examining how its dimensions enhance employee performance within supply chain operations.

Fourth, prior studies [49, 103-105] investigating OCB's effects on performance often overlooked the context of the supply chain and generally considered only four OCB dimensions. In contrast, this research incorporates six widely recognized OCB dimensions—civic virtue, organizational loyalty, courtesy, helping behavior, sportsmanship, and conscientiousness—providing a more comprehensive assessment and addressing an important gap in the literature **(Figure 1)**.

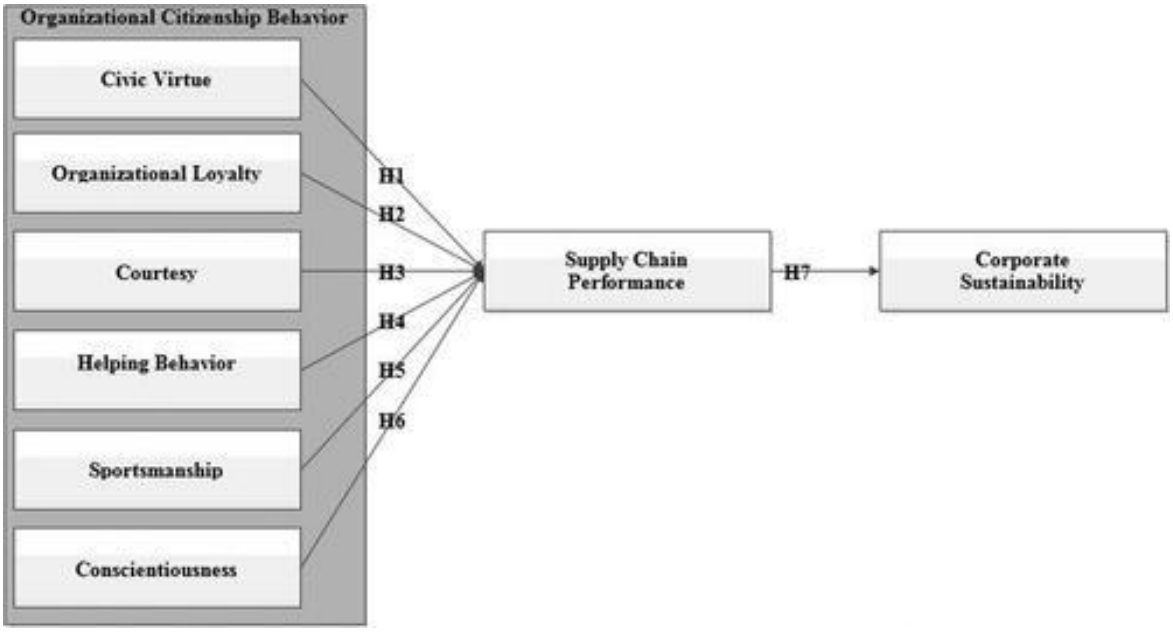

Figure 1. Theoretical framework

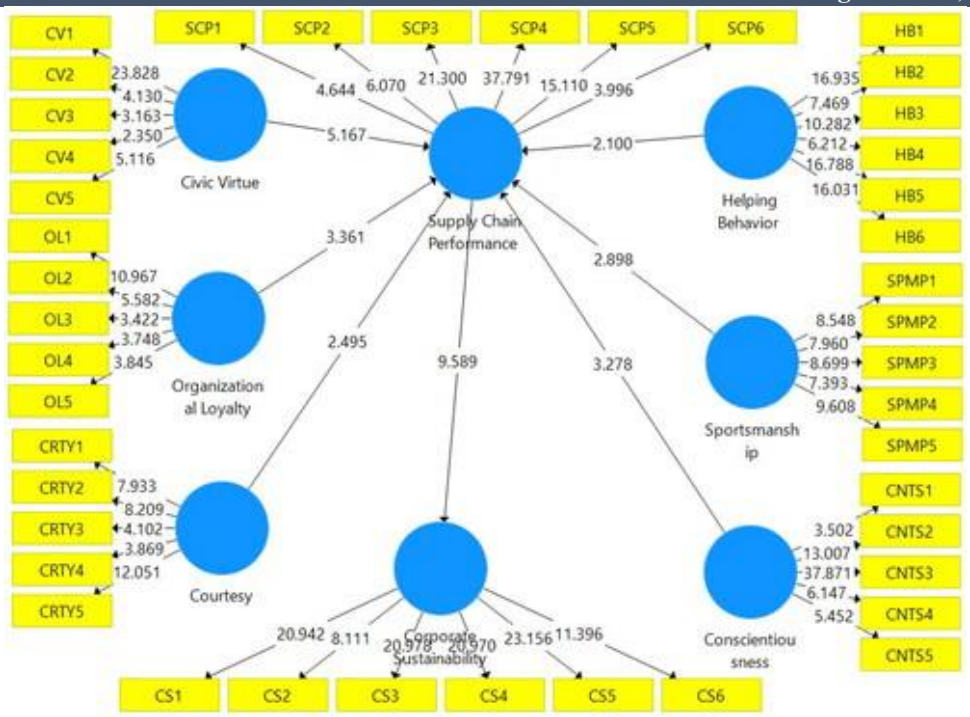

Figure 2. Composite reliability's values

Specific theoretical contributions

On a more focused level, this study provides important insights into the distinct influence of OCB dimensions on SCP and CS. Notably, civic virtue was found to have a statistically significant effect on SCP (T = 5.167, p = 0.00), indicating that employees demonstrating a high level of civic engagement contribute meaningfully to both SCP and organizational sustainability. This effect likely reflects the employees' active involvement and genuine concern for organizational well-being. These results corroborate prior research highlighting positive links between civic virtue and performance [35, 48, 49, 103, 106], though they contrast with Hazratian *et al.* [50], who reported no significant association.

Similarly, organizational loyalty demonstrated a strong and positive relationship with SCP (T = 3.192, p = 0.002). Employees who advocate for their organization externally, acknowledge colleagues' contributions, and support compliance with SC standards significantly enhance organizational performance. This finding aligns with previous studies showing favorable links between loyalty and performance outcomes [48, 107].

Courtesy was also positively associated with SCP (T = 2.519, p = 0.012), consistent with research emphasizing that proactive communication and preparation for potential challenges enhance employee effectiveness [54, 56, 57]. Helping behavior likewise had a significant positive impact (T = 2.034, p = 0.042), suggesting that supporting colleagues and customers beyond one's core responsibilities improves both performance and operational efficiency. This result corroborates earlier studies by Arora and Khatri [35], Dinka [104], Nyarieko [106], and Solomon and Bezabih [49].

Sportsmanship was found to significantly influence SCP (T = 2.795, p = 0.005), illustrating that employees who maintain a positive attitude, avoid complaints, and accept work-related changes for the organization's benefit contribute to more stable and resilient SC operations. These findings align with Arora and Khatri [35], Nyarieko [106], Solomon and Bezabih [49], Abdu [103], and Barsulai *et al.* [108]. Conscientiousness also exhibited a substantial effect on SCP (T = 3.405, p = 0.001), demonstrating that employees dedicating additional time and effort beyond standard job requirements significantly enhance operational performance, in line with Romaiha *et al.* [63] and Yen & Niehoff [64]. Finally, SCP itself was shown to have a pronounced effect on CS (T = 9.253, p = 0.00), supporting prior evidence of the critical link between high-performing SC practices and sustainability outcomes [10, 26, 63-65].

Practical and policy implications

The findings highlight several practical strategies for organizations seeking to enhance SCP through OCB. First, firms should design and implement policies that actively promote and reinforce OCB, with particular attention to dimensions such as altruism and conscientiousness, which show strong operational and sustainability benefits. These interventions can boost employee motivation while aligning individual efforts with broader sustainability objectives.

Second, SC managers should ensure clear and transparent signaling of employee behaviors related to OCB. Recognizing and measuring OCB contributions allows customers and stakeholders to make informed decisions, reduces miscommunication, and enhances overall organizational reputation. Training programs should incorporate practical scenarios to illustrate the real-world effects of civic virtue, loyalty, courtesy, helping behavior, sportsmanship, and conscientiousness on SCP.

Third, performance evaluation systems that reward discretionary behaviors can reinforce OCB, motivating employees to contribute beyond formal job responsibilities. Recognition and reward mechanisms strengthen engagement and foster a culture of collaboration and innovation.
Fourth, fostering effective communication, coordination, and teamwork among SC professionals is crucial. Regular meetings, feedback mechanisms, and collaborative initiatives help embed OCB behaviors in day-to-day operations, enhancing SCP. Encouraging employee loyalty through fair compensation, professional growth opportunities, and supportive environments further strengthens SC outcomes.
Fifth, integrating OCB into SC practices directly supports both SCP and CS. Organizations should strategically embed OCB within operational procedures, ensuring that proactive employee behaviors translate into sustainable outcomes. SC managers should focus on process optimization, as this reinforces long-term sustainability through consistent and high-quality operations.
Lastly, policymakers at local, regional, and federal levels should consider incorporating OCB dimensions into guidelines and frameworks for SCP and sustainability. Evaluating the impact of civic virtue, helping behavior, sportsmanship, loyalty, and conscientiousness on employee performance across sectors can inform regulations that enhance organizational efficiency and sustainability outcomes.
In summary, organizations that strategically cultivate OCB across its key dimensions can strengthen SC performance, advance corporate sustainability, and maintain competitiveness in the long term.

Future research directions

Although this study provides valuable insights into the influence of OCB on SCP and CS, several avenues remain for further exploration. First, longitudinal research could examine the evolution of OCB over time and its enduring effects on SCP and CS, offering a more nuanced understanding of its sustained impact. Employing mixed-methods designs that integrate both quantitative and qualitative approaches, including direct observational data, could enrich our comprehension of these dynamics.
Second, future studies should aim to replicate and validate the OCB–SCP relationship across different industries and organizational contexts. Such investigations would help identify sector-specific factors that shape this relationship and inform tailored strategies to leverage OCB for enhancing SCP. Third, while the current research collected data globally, subsequent studies could focus on individual countries or industries, providing context-specific insights and practical recommendations. Cross-cultural analyses could further illuminate how cultural variations influence OCB behaviors and their effect on SCP.
Fourth, additional mediating and moderating variables should be explored to better understand the mechanisms underlying the OCB–SCP–CS relationship. Qualitative techniques such as interviews and case studies could offer deeper perspectives on the subtleties of OCB's influence on performance and sustainability outcomes. Fifth, examining the intersection of OCB with employee well-being and job satisfaction could shed light on the human-centered factors that enhance SCP while fostering positive workplace experiences.
Sixth, the role of technology in supporting or constraining OCB warrants investigation, as technological tools and platforms may facilitate or impede employee discretionary behaviors that impact SCP. Seventh, future research should consider expanding the scope of OCB by including additional dimensions beyond the six analyzed in this study to provide a more comprehensive understanding of its effects on SCP and CS. Finally, external factors such as economic fluctuations, competitive pressures, and regulatory changes should be considered as potential influencers of the OCB–SCP relationship.
By addressing these research gaps, scholars and practitioners can gain a more detailed understanding of how OCB contributes to SCP and overall business sustainability. Despite its limitations, this study establishes a foundation for future inquiry, highlighting the considerable potential of OCB in shaping sustainable organizational practices.

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