

Green Talent Management and Innovative Work Behavior: The Mediating Role of Transformational Leadership

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Abstract

In today's rapidly evolving business environment, organizations must foster innovation to maintain competitiveness and sustainability. Employee innovative work behavior plays a crucial role in driving organizational success, yet the factors that influence it remain underexplored. This study examines the impact of green talent management on innovative work behavior, with transformational leadership as a mediating factor. This study adopts a quantitative research approach, using a descriptive and causal research design to collect data from 217 employees in banking sector in Nepal, through a structured questionnaire. The findings indicate that green soft talent management enhances transformational leadership, which in turn fosters innovative work behavior, highlighting the critical role of leadership in promoting innovation. However, green hard talent management does not directly influence transformational leadership or innovative work behavior, and green soft talent management alone does not sufficiently drive innovation without leadership support. Transformational leadership fully mediates the relationship between green soft talent management and innovative work behavior, emphasizing its importance in translating sustainability-driven human resource management practices into employee innovation. This study contributes to social exchange theory, social identity theory, and transformational leadership theory by demonstrating how leadership strengthens the impact of sustainability-focused human resource management on innovation. The findings highlight the importance of transformational leadership in fostering an innovative workforce and ensuring long-term organizational sustainability.

Keywords: *Green Talent Management, Transformational Leadership, Innovative Work Behavior, Sustainability, Human Resource Management, Banking Sector, Nepal.*

Introduction

The contemporary business environment is characterized by rapid changes and heightened uncertainty, compelling organizations to proactively adapt and innovate. In this dynamic landscape, organizations must embrace innovation to sustain competitive advantage and ensure long-term survival (Park & Jo, 2018). Innovation and creativity have become pivotal to organizational performance, with firms increasingly recognizing the significance of fostering employees' innovative work behavior (IWB) to drive sustainable growth (Anderson, Potočnik & Zhou, 2014). Without continuous innovation, businesses risk stagnation, particularly in developing economies where adaptive strategies are essential for success. Given the mounting challenges posed by economic volatility, global competition, and environmental concerns, organizations are prioritizing innovation not only as a strategic goal but also as an operational necessity (Atitumpong & Badir, 2018). Employee innovation serves as a fundamental driver of an organization's capability to redefine and enhance its performance (Zhang & Bartol, 2010).

In this regard, innovative work behavior is increasingly recognized as a core element of organizational success, enabling firms to remain resilient and responsive to evolving market conditions. IWB fosters continuous improvement, adaptation, and value creation within organizations, allowing them to thrive in uncertain environments (Janssen, 2000; Ramamoorthy et al., 2005). Employees' capacity to engage in IWB is contingent upon both individual and organizational factors. West and Farr (1990) define IWB as the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures. Janssen (2000) further emphasizes that IWB entails enthusiasm, persistence, and a propensity to take risks. Given the increasing importance of change and innovation in business, identifying the determinants of IWB has become a crucial research endeavor (Kor, 2016).

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One emerging strategy to enhance employees' IWB is green talent management (GTM), which incorporates environmentally sustainable practices into workforce development. Green TM is categorized into green hard talent management and green soft talent management. The former focuses on technical skills and expertise required to implement sustainability initiatives, whereas the latter emphasizes values, behaviors, and attitudes that align with environmental goals. Recognizing the growing significance of sustainability, scholars have called for an updated conceptualization of talent management that integrates environmental concerns (Gardas et al., 2019). Green TM involves systematically attracting, nurturing, and retaining individuals with green skills and potential to advance workplace sustainability efforts (Bui & Chang, 2018; Gardas et al., 2019). By embedding environmental consciousness into talent management strategies, organizations can cultivate a workforce that is committed to sustainable practices and innovative problem-solving (Malik et al., 2015; Opoku et al., 2019).

Transformational leadership (TL) has been identified as a key factor in fostering employee innovation and commitment to sustainability. Transformational leaders inspire employees to go beyond self-interest, motivating them to contribute to organizational and societal well-being. By articulating a compelling vision for environmental sustainability, these leaders encourage creative problem-solving and intellectual stimulation among employees (Bass & Avolio, 1994). Transformational leadership has gained prominence as a means of sustaining strong organizational performance in competitive and dynamic markets (Ogbeibu et al., 2022). Moreover, it plays a crucial role in addressing challenges related to talent management, particularly in response to global sustainability imperatives and the demands of the fourth industrial revolution (Brougham & Haar, 2018; Nirino et al., 2022). Studies indicate that transformational leaders can effectively bridge the gap between talent management and innovation, facilitating employees' engagement in sustainability-focused initiatives (Contreras et al., 2020; Gumusluogu & Ilsev, 2009; Yukl, 2002).

Despite growing academic interest in sustainable business practices, research on green talent management and its impact on IWB remains limited, particularly in developing economies such as Nepal. While existing literature has explored various determinants of IWB, including leadership, organizational culture, and job characteristics (Jung et al., 2003; Afsar et al., 2014; Bos-Nehles & Veenendaal, 2019), findings remain inconclusive (Contreras et al., 2020). Additionally, research linking GTM with IWB in specific industry contexts, such as Nepal's banking sector, is scarce. Given the increasing pressure on Nepalese banks to adopt environmentally sustainable practices, understanding how green TM and transformational leadership influence IWB is vital. Organizations must equip employees with the necessary competencies and motivation to drive green innovation while ensuring leadership strategies effectively support these efforts.

This study aims to address these gaps by investigating the mediating effect of transformational leadership in the relationship between green talent management and employees' innovative work behavior in banking sector. The study contributes to the literature by clarifying how green talent management practices influence employees' innovative work behavior and examining the mechanisms through which transformational leadership facilitates this relationship. By exploring these dynamics, the study provides valuable insights for organizations seeking to align talent management, leadership strategies, and sustainability objectives. Through this investigation, the study aims to offer practical implications for fostering a sustainable workforce, enhancing organizational innovation, and contributing to broader environmental sustainability goals within the banking sector.

Literature Review and Hypothesis Development

Theories Underpinnings

Social Exchange Theory: Social exchange theory served as a foundational framework in understanding employee work behavior. The theory emphasizes reciprocal relationships, suggesting that positive contributions and performance should be mutually rewarded (Blau, 1968). In the context of Green Talent Management (GTM), organizations that prioritize employee well-being and development foster reciprocal commitment and engagement (Gouldner, 1960; Narayanan et al., 2019). GTM, an emerging concept, enables leaders to strategically attract, nurture, retain, and deploy employees aligned with sustainability

objectives (Gardas et al., 2019). This study extends social exchange theory by examining how GTM influences employee retention (ER) in tourism service firms, marking a novel contribution to the literature (Blau, 1968).

Social Identity Theory: This theory posits that individuals derive their self-concept from both personal characteristics and group membership (Ashforth & Mael, 1989). In exploring the link between GTM and ER, this study investigates green organizational identity (GOI) as a mediating mechanism. GOI represents a collective understanding of environmental management and sustainability practices, shaping employees' behaviors and commitments (Chen, 2011). By reinforcing an organization's environmental ethos, GOI strengthens employee retention through enhanced identification with sustainability goals. Additionally, this study examines the role of green shared vision (GSV), defined as a unified strategic commitment to environmental sustainability internalized by organizational members (Chen et al., 2015). The study proposes that GSV moderates the GTM-ER relationship, reinforcing the mediating role of GOI in driving sustainable workforce retention.

Transformational Leadership Theory: Leadership styles significantly influence innovation and creativity, with transformational leadership (TL) emerging as a key driver of organizational success (Alheet et al., 2021; Khan et al., 2012; Lei et al., 2020; Schuckert et al., 2018). TL fosters innovation by inspiring and motivating employees beyond self-interest, aligning their efforts with organizational objectives (Al-Husseini & Elbeltagi, 2016; Alrowwad & Abualoush, 2020; Choi et al., 2016; Suifan et al., 2018). Initially introduced by Burns (1978), TL was later expanded upon by Bass (1999), who emphasized charisma, motivation, and intellectual stimulation as key dimensions of effective leadership. Transformational leaders elevate employee performance by instilling a sense of purpose, commitment, and creativity (Ayoub et al., 2021; Bass & Riggio, 2006; Hater & Bass, 1988). Through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, transformational leaders cultivate an environment conducive to innovation and enhanced employee retention (Bass, 1999).

Interaction between Green Talent Management, innovative work behavior, transformational leadership

Green Hard Talent Management: Green hard talent management (TM) focuses on enhancing competitive advantage and promoting environmental sustainability initiatives. It adopts a mechanistic approach that targets specific markets within talent management. In this framework, green talent is considered a crucial resource that must be managed through structured administrative processes, hierarchical organizational cultures, and rigorous performance appraisal systems (Adeosun & Ohiani, 2020; Bui & Chang, 2018; John et al., 2009).

Green Soft Talent Management: Green soft TM represents a humanistic approach to talent management, emphasizing inclusivity in decision-making, effective communication, and organizational support for employees' well-being. It fosters an environment where leadership techniques inspire green talent teams to create and implement ecological initiatives for sustainability (Gardas et al., 2019; John et al., 2009). Green soft TM also supports climate action projects by providing an adaptive organizational culture, an adhocracy-driven work environment, and adequate resources for sustainable development (Bui & Chang, 2018; Lee et al., 2017).

Transformational Leadership: Transformational leadership is a leadership style centered on inspiring and motivating followers to realize their full potential and exceed expectations. This approach entails crafting a compelling vision for the future, fostering passion and purpose among team members, and encouraging a culture of innovation and continuous growth. Transformational leaders exhibit charisma, vision, intellectual stimulation, individualized consideration, and an emphasis on empowering employees. According to Bass (1999), "Transformational leadership refers to the leader moving the follower beyond immediate self-interests through idealized influence (charisma), inspiration, intellectual stimulation, or individualized consideration."

Innovative Work Behavior: Innovative work behavior is defined as the intentional behaviors of individuals to produce and implement new and useful ideas explicitly intended to benefit the individual, group, or

organization. In an increasingly complex and dynamic business landscape, fostering innovation is crucial for sustained organizational performance (Teece & Leih, 2016). Employees' human capital and work behavior are essential drivers of innovation (Amankwaa et al., 2022), prompting scholars to explore the factors influencing innovative work behavior (Scott & Bruce, 1994; Woodman et al., 1993). Innovative work behavior (IWB) enables employees to adapt, generate novel ideas, and implement creative solutions within their roles (Farr & Ford, 1990; Scott & Bruce, 1994). It encompasses a multi-stage process, including idea generation, championing, and execution (Spreitzer, 1995; Janssen, 2000). IWB is instrumental in sustaining competitive advantage and organizational value creation (Muchiri et al., 2020). While creativity has been widely studied, innovation theory differentiates it from IWB, emphasizing the implementation of ideas (Amabile, 1988). McLean (2005) clarifies that although creativity and innovation are often used interchangeably, they represent distinct constructs. By examining the relationship between GTM, TL, and IWB, this study contributes to the growing body of knowledge on sustainable talent management and innovation.

Green Talent Management and Employees' Innovative Work Behavior

Green talent management practices have a significant positive impact on employees' innovative work behavior. Odugbesan et al. (2023) found that both green hard and soft talent management contribute to fostering innovative work behavior among employees. Similarly, Umair et al. (2023) emphasized the crucial role of human resource capital, reporting a significant influence of green hard and soft talent management on employees' innovative work behavior.

Further research by Umair et al. (2022) confirmed a direct and positive link between green hard and soft talent management and employees' innovative work behavior, as well as their green performance. Their findings underscored the strong connection between innovative work behavior and green performance, reinforcing the sustainable success of organizations. Additionally, Ogbeibu et al. (2021) highlighted that leadership support culture (LSC) amplifies the negative influence of green soft talent management on turnover intention. Moreover, both LSC and dynamic team integration (DTI) were found to mitigate the positive impact of green hard talent management on turnover intention, further emphasizing the importance of leadership and team dynamics in managing sustainable talent strategies.

H1: Green hard talent management influences employees' innovative work behavior

H2: Green soft talent management influences employees' innovative work behavior

Green Talent Management and Transformational Leadership: Transformational leadership (TL) plays a critical role in encouraging employees to exceed environmental expectations (Chen & Chang, 2015; Peng et al., 2020). It encompasses key elements such as influence, motivation, intellectual stimulation, and personalized care (Robertson, 2018). Green influence involves leaders acting as environmental role models, while green motivation inspires employees to prioritize sustainability over self-interest. Green intellectual stimulation fosters innovative approaches to environmental challenges, and green personalized care acknowledges employees' contributions and skill development in sustainability initiatives. These components collectively help integrate green behaviors into workplace culture and enhance sustainability-oriented skills. Furthermore, transformational leaders cultivate an open environment that encourages employees to share ideas and engage in collaborative problem-solving (Yukl, 2002).

Several studies highlight the role of green hard talent management in shaping transformational leadership. Odugbesan et al. (2023) found a significant influence of green hard talent management on TL, emphasizing its impact on leadership effectiveness. Similarly, Umair et al. (2023) underscored its role in fostering transformational leadership and reinforcing sustainability engagement. Mansoor et al. (2020) examined how green management initiatives stimulate TL and enhance employee creativity. Additionally, Ogbeibu et al. (2021) identified a positive relationship between green hard talent management and TL, suggesting that it can help mitigate employee turnover risks. This study builds on these findings by further exploring the interaction between green talent management, transformational leadership, and innovative work behavior, contributing to research on sustainable workforce management. Likewise, Green soft talent management

(TM) adopts a humanistic approach by fostering green talent through communication, inclusive decision-making, well-being support, and leadership that promotes sustainability (Gardas et al., 2019; John et al., 2009). It facilitates sustainability initiatives by cultivating a supportive work culture and ensuring access to necessary resources. Transformational leadership (TL) plays a key role in motivating employees to surpass environmental expectations (Chen & Chang, 2015; Peng et al., 2020). It encompasses influence, motivation, intellectual stimulation, and personalized care (Robertson, 2018). Green influence involves leaders serving as environmental role models, while green motivation inspires employees to prioritize sustainability. Green intellectual stimulation encourages innovative approaches to environmental challenges, and green personalized care acknowledges employees' contributions and skill development in sustainability efforts. These factors contribute to normalizing green behaviors and developing sustainability-oriented competencies. Additionally, transformational leaders foster an open environment where employees can express ideas and collaborate on problem-solving (Yukl, 2002). Empirical findings on the relationship between green soft talent management and transformational leadership present mixed perspectives. Odugbesan et al. (2023) found no significant relationship between these two variables, suggesting that a negative interaction could hinder employees' innovative work behavior. Similarly, Umair et al. (2023) reported an insignificant impact of green soft talent management on transformational leadership. In contrast, Ogbeibu et al. (2021) identified a positive relationship, indicating that organizations benefit from recognizing and supporting green values and competencies among employees.

H3: Green hard talent management influences transformational leadership

H4: Green soft talent management influences transformational leadership

Transformational Leadership and Employees' Innovative Work Behavior

Transformational leadership plays a pivotal role in fostering employees' innovative work behavior. Karimi et al. (2022) established a direct and positive relationship between transformational leadership and employees' innovative work behavior. Similarly, Tan et al. (2021) confirmed its positive influence, offering valuable insights for shaping effective human resource and organizational development strategies. Afsar and Umrani (2020) also reported a significant positive association between transformational leadership and employees' innovative work behavior.

Supportive leadership enhances employees' motivation, which subsequently fosters innovation. Khaola and Coldwell (2019) highlighted the positive effect of transformational leadership on employees' innovative work behavior. Likewise, Afsar and Masood (2018) found that transformational leadership exhibits the strongest positive relationship with innovative work behavior, particularly in environments characterized by high trust and uncertainty avoidance. However, contrasting findings from Luthans (2000) indicated that transformational leadership does not significantly impact employees' innovative work behavior. Instead, recognizing employees' job performance, competencies, and personal values was identified as a more effective means of improving performance.

H5: Transformational Leadership Influences Employees' Innovative Work Behavior

H6: The effect of green hard talent management on employees' innovative work behavior is significantly mediated by transformational leadership

H7: The effect of green soft talent management on employees' innovative work behavior is significantly mediated by transformational leadership

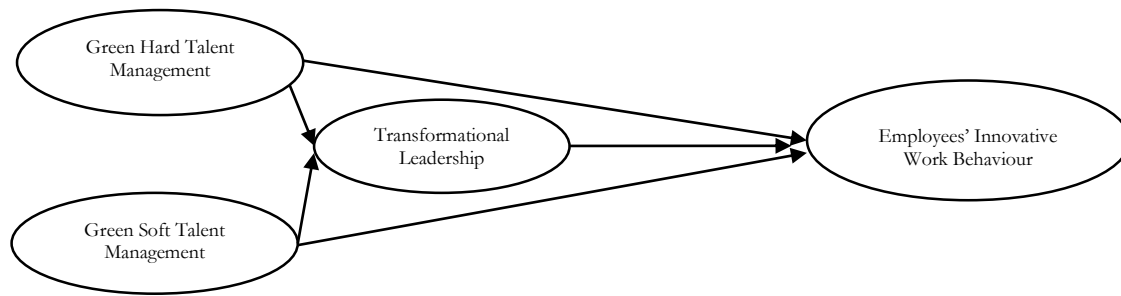


Figure 1. Conceptual Framework

Source: The Authors

Methods

Research design: This study employs a quantitative approach to examine Green Talent Management and Employees' Innovative Work Behavior, with Transformational Leadership as a mediator. It utilizes a descriptive research design for an in-depth variable analysis and a causal design to assess cause-and-effect relationships based on hypotheses.

Population and sample: The study targeted employees of commercial banks in Nepal, encompassing both banking professionals and support staff across various roles and levels. A convenience sampling method, a non-probability approach, was used to ensure representation across segments. A total of 300 employees has been contacted and 217 employees responded, deemed sufficient for analysis (Dash & Paul, 2021). The sample included employees from different departments and branches, ensuring diversity in roles and experiences. This approach facilitated a comprehensive understanding of Green Talent Management and Employees' Innovative Work Behavior. Table 1 presents the demographic profile of the respondents.

Table 1. Respondents' Profile

Demographic Variables	Category	N	%
Gender	Male	128	59
	Female	89	41
Age	20 – 30 years	147	67.7
	31 – 40 years	60	27.6
	41 – 50 years	9	4.1
	Above 50 years	1	0.5
Education Level	SEE or SLC/+2	12	5.5
	Bachelor	113	52.1
	Masters	88	40.6
	PhD	1	0.5
	Others	3	1.4

Source: The Authors

Data collection procedure and instrumentation: The data collection involved distributing a structured questionnaire to employees of commercial banks in Nepal. Developed from relevant literature, the questionnaire was pre-tested for clarity and accuracy. It comprised two sections: one for demographic details such as age, gender, and education, and another for responses on Green Talent Management (GTM), Employees' Innovative Work Behavior, and Transformational Leadership. GTM was measured using adapted scales from Ogbeibu et al. (2022), with seven items each for Green Hard and Soft Talent Management. Transformational Leadership was assessed using a nine-item scale from Lin et al. (2016), while Innovative Work Behavior was measured with nine items six from Aboramadan (2020) and three contextual additions. A seven-point Likert scale (1 = strong disagreement, 7 = strong agreement) was used.

Data analysis techniques: The collected data were coded and organized in Microsoft Excel before being analyzed in SPSS for descriptive statistics. For inferential analysis, PLS-SEM was performed using SmartPLS 4, employing bootstrapping with 10,000 sub-samples and the percentile technique for hypothesis testing. This approach ensures a robust evaluation of the model.

Data normality, common method bias, measurement and structural model: Mardia's test was conducted to assess univariate and multivariate normality. The results indicated that the data did not meet normality assumptions, with Mardia's multivariate skewness at 352.564 ($p = 0.001$) and kurtosis at 534.376 ($p = 0.001$), both exceeding the acceptable thresholds of ± 3 for skewness and ± 2 for kurtosis (Kline, 2012). Additionally, the significant Mardia's coefficient (critical ratio > 1.96) further confirmed the presence of non-normality. To address potential common method bias, Harman's single-factor test was performed. The analysis revealed that a single factor accounted for only 37% of the total variance, indicating that common method bias was not a concern.

Results

Measurement Model Assessment

The measurement model was evaluated through reliability, convergent validity, and discriminant validity to ensure accurate construct measurement.

Reliability and Convergent Validity: The reliability and validity of the measurement model were assessed using key metrics, including Cronbach's alpha, composite reliability (ρ), and average variance extracted (AVE), with the thresholds (Hair et al., 2021). All constructs met the minimum thresholds, confirming their robustness. This study ensures that all factor loadings surpass the 0.5 benchmark. For green hard talent management, Cronbach's alpha (0.768), composite reliability (0.813), and AVE (0.518) indicated moderate to good reliability and acceptable convergent validity. Green soft talent management showed strong reliability with Cronbach's alpha (0.884), composite reliability (0.891), and AVE (0.591), affirming its validity. Similarly, transformational leadership exhibited high reliability (Cronbach's alpha = 0.905, composite reliability = 0.911) and acceptable convergent validity (AVE = 0.570). Innovative work behavior also demonstrated strong reliability (Cronbach's alpha = 0.870, composite reliability = 0.870) and validity (AVE = 0.607). Collectively, these results confirm the measurement model's reliability and validity, ensuring its suitability for further analysis. Table 2 presents the reliability and convergent validity.

Table 2. Reliability and Convergent Validity

Construct	Items	Loading	VIF	CA	CR	AVE
Green Hard Talent Management (GHTM)	GHTM1	0.714	1.392	0.768	0.813	0.518
	GHTM2	0.55	1.215			
	GHTM4	0.716	1.514			
	GHTM5	0.821	1.635			
	GHTM6	0.77	1.643			

Green Soft Talent Management (GHTM)	GSTM1	0.735	1.731	0.884	0.891	0.591
	GSTM2	0.817	2.258			
	GSTM3	0.728	1.689			
	GSTM4	0.689	1.707			
	GSTM5	0.82	2.175			
	GSTM6	0.765	2.018			
	GSTM7	0.817	2.18			
Transformational Leadership (TL)	TL1	0.714	2.4	0.905	0.911	0.57
	TL2	0.845	2.392			
	TL3	0.784	1.96			
	TL4	0.807	2.072			
	TL5	0.756	2.129			
	TL6	0.761	2.357			
Innovative Work Behavior (IWB)	IWB1	0.759	2.591	0.87	0.87	0.607
	IWB2	0.754	1.898			
	IWB3	0.738	1.758			
	IWB4	0.753	1.784			
	IWB5	0.761	2.643			
	IWB6	0.811	1.946			
	IWB7	0.834	2.192			
	IWB8	0.709	1.87			
	IWB9	0.664	1.807			

Source: The Authors

Discriminant Validity: Discriminant validity was assessed using cross-loading analysis, the Fornell-Larcker criterion, and the Heterotrait-Monotrait Ratio (HTMT). Cross-loading analysis confirmed that each construct's indicators had higher loadings on their respective constructs than on others, ensuring distinctiveness. The Fornell-Larcker criterion further supported discriminant validity, as the square root of the Average Variance Extracted (AVE) for each construct exceeded its correlations with other constructs. Finally, the HTMT ratio was below the 0.90 threshold for all constructs, reinforcing their distinctiveness. Collectively, these findings confirm that the constructs in the study are conceptually and statistically separate, supporting the model's validity. Table 3 and 4 presents the indicators of discriminant validity and crossloading matrix has been placed in Annexure 1.

Table 3. Fornell-Larcker Criterion

	GHTM	GSTM	IWB	TL
GHTM	0.760			
GSTM	0.756	0.769		
IWB	0.446	0.460	0.755	
TL	0.538	0.643	0.645	0.779

Source: The Authors

Table 4. Heterotrait-Monotrait Ratio

	GHTM	GSM	IWB	TL
GHTM				
GSTM	0.884			
IWB	0.511	0.504		
TL	0.621	0.725	0.720	

Source: The Authors

Status of Green Talent Management, Transformational Leadership, and Innovative Work Behavior

The descriptive analysis of key constructs—Green Hard Talent Management, Green Soft Talent Management, Transformational Leadership, and Innovative Work Behavior, reveals positive perceptions among respondents regarding environmental sustainability and leadership in their organizations. Green Hard Talent Management had an average mean of 4.87 (SD = 0.986), with the highest agreement on task efficiency in green initiatives (M = 5.18) and the lowest on bureaucracy hindering sustainability efforts (M = 4.61). Similarly, Green Soft Talent Management also had an overall mean of 4.85 (SD = 1.131), with the highest agreement on organizational support for future development (M = 5.09) and the lowest on employees having autonomy in green tasks (M = 4.62). Transformational Leadership was strongly endorsed, with an average mean of 5.43 (SD = 0.997), where respondents most agreed that leadership provides encouragement and recognition (M = 5.55) and least agreed on leadership inspiring respect through competence (M = 5.33). Innovative Work Behavior had the highest overall mean (M = 5.63, SD = 1.148), with strong agreement on searching for new technologies and methods (M = 5.73) and relatively lower agreement on generating original solutions (M = 5.44). Overall, the findings suggest favorable perceptions of green talent management, leadership, and innovation in the workplace, though areas for improvement remain, particularly in providing more autonomy in green initiatives and fostering originality in problem-solving.

The correlation analysis indicates significant positive relationships among the key variables. Green Hard Talent Management (GHTM) is strongly correlated with Green Soft Talent Management (GSTM) ($r = 0.756$, $p < .01$), Transformational Leadership (TL) ($r = 0.538$, $p < .01$), and Innovative Work Behavior (IWB) ($r = 0.446$, $p < .01$). Similarly, GSTM is positively correlated with TL ($r = 0.643$, $p < .01$) and IWB ($r = 0.460$, $p < .01$). Additionally, TL shows a strong correlation with IWB ($r = 0.645$, $p < .01$), suggesting that transformational leadership plays a key role in fostering innovative work behavior. The descriptive and correlational analysis is placed in Table 5.

Table 5. Descriptive and Correlational Analysis

Variables	M	SD	GHTM	GSTM	TL	IWB
GHTM	4.87	0.986	-	0.756 (<.01)	0.538 (<.01)	0.446 (<.01)
GSTM	4.85	1.131	-	-	0.643 (<.01)	0.460 (<.01)
TL	5.43	0.997	-	-	-	0.645 (<.01)
IWB	5.63	1.148	-	-	-	-

Source: The Authors

Structural Model Assessment – The Path Analysis

The structural model assessment was conducted using SmartPLS4 with a bootstrapping procedure with 10000 sub samples, percentile bootstrap technique.

Path Coefficients: The path analysis results indicate that Green Soft Talent Management (GSTM) significantly influences Transformational Leadership (TL) ($\beta = 0.553$, $p = 0.001$), and TL has a strong positive impact on Innovative Work Behavior (IWB) ($\beta = 0.582$, $p = 0.001$), supporting H3 and H4. However, Green Hard Talent Management (GHTM) does not significantly predict TL ($\beta = 0.119$, $p = 0.162$) or IWB ($\beta = 0.158$, $p = 0.068$), and GSTM does not have a direct effect on IWB ($\beta = -0.033$, $p = 0.742$), leading to the rejection of H1 and H2. Furthermore, the Variance Inflation Factor (VIF) values, ranging between 1.724 and 2.863, remain well below the threshold of 5, confirming the absence of collinearity issues in the model. Table 6 presents the path analysis.

Table 6. Path Analysis – Hypothesis Testing

Hypothesis	Path	β	SD	t values	p values	CI 95%		VI F	Result
						2.50 %	97.50 %		
H1	GHTM -> IWB	0.158	0.087	1.823	0.068	0.006	0.347	2.36	Not supported
H2	GSTM -> IWB	-0.033	0.101	0.329	0.742	-0.244	0.15	2.86	Not supported
H3	GHTM -> TL	0.119	0.085	1.398	0.162	-0.037	0.297	2.33	Not supported
H4	GSTM -> TL	0.553	0.093	6.126	0.001	0.365	0.717	2.33	Supported
H5	TL -> IWB	0.582	0.073	7.929	0.001	0.423	0.709	1.72	Supported
H6	GHTM -> TL -> IWB	0.069	0.05	1.385	0.166	-0.02	0.177	-	Not supported
H7	GSTM -> TL -> IWB	0.322	0.068	4.733	0.001	0.188	0.456	-	Supported

Source: The Authors

Coefficient of Determination (R²): The model explained 42% of the variance in Transformational Leadership (TL) ($R^2 = 0.420$, $p = 0.001$) and 43% of the variance in Innovative Work Behavior (IWB) ($R^2 = 0.430$, $p = 0.001$), indicating moderate predictive accuracy. Specifically, 42% of the variance in TL is explained by Green Hard Talent Management (GHTM) and Green Soft Talent Management (GSTM). Similarly, 43% of the variance in IWB is accounted for by TL, GHTM, and GSTM, explaining the model's predictive power. Based on existing literature, an R^2 value of approximately 0.50 is considered moderate in behavioral sciences (Hair et al., 2014; Chin, 1998). This suggests that while the model provides reasonable predictive power, there is room for improvement by incorporating additional variables that may influence transformational leadership and innovative work behavior. Future research could consider factors such as leadership style variations, intrinsic motivation, organizational climate, or digital transformation initiatives to enhance the explanatory power of the model. The findings suggest that transformational leadership plays a crucial role in fostering innovative work behavior. While green soft talent management positively influences transformational leadership, neither green hard nor soft talent management directly impacts innovative work behavior. Further, the SRMR value was 0.072, indicating a good model fit according to Hu and Bentler

(1999). The model demonstrates moderate predictive power and a good fit. Model estimate and model fit indices are palced in Table 7.

Table 7. Model Estimate (R²)

Endogenous	R ²	SD	t value	p value	CI 95%		SRMR	NFI
					2.50%	97.50%		
IWB	0.43	0.077	5.609	0.001	0.29	0.589	0.072	0.762
TL	0.42	0.067	6.235	0.001	0.3	0.562		

Source: The Authors

Effect Size (F²): The effect size (F²) analysis showed that GSTM had a small effect on TL (F² = 0.226, p = 0.020), while TL had a moderate effect on IWB (F² = 0.345, p = 0.006). However, GHTM and GSTM had no significant effects on IWB. The effect size indicators are placed in Table 8.

Table 8. Effect Size (F²)

Path	F ²	SD	t value	p value	CI 95%	
					2.50%	97.50%
GHTM -> IWB	0.019	0.024	0.778	0.437	0.001	0.088
GHTM -> TL	0.011	0.019	0.561	0.575	0.001	0.068
GSTM -> IWB	0.001	0.01	0.066	0.947	0.001	0.036
GSTM -> TL	0.226	0.097	2.333	0.020	0.085	0.463
TL -> IWB	0.345	0.125	2.748	0.006	0.150	0.644

Mediation Analysis

The mediation analysis was conducted using SmartPLS4 with bootstrapping techniques to examine the indirect effects of transformational leadership (TL) between green talent management (GHTM and GSTM) and innovative work behavior (IWB). The results indicate that TL does not mediate the relationship between Green Hard Talent Management (GHTM) and Innovative Work Behavior (IWB) ($\beta = 0.069$, $p = 0.166$), as the indirect effect is not statistically significant. Consequently, Hypothesis H5 is rejected.

However, TL fully mediates the relationship between Green Soft Talent Management (GSTM) and IWB ($\beta = 0.322$, $p = 0.001$), as the direct effect of GSTM on IWB is insignificant, while the indirect effect through TL is significant. Since the direct and indirect effects have opposite signs, Variance Accounted For (VAF) cannot be applied, confirming full mediation. Thus, Hypothesis H6 is accepted at the 0.01 significance level. These findings highlight the crucial role of transformational leadership in translating green soft talent management initiatives into innovative work behavior among employees.

Discussion

This study aimed to investigate the impact of Green Talent Management (GTM) practices and Transformational Leadership (TL) on employees' Innovative Work Behaviour (IWB) in the banking sector. Additionally, the mediating effect of transformational leadership examined was as well tested. The findings offer several key insights into how Green Hard and Soft Talent Management practices, along with Transformational Leadership, influence Innovative Work Behaviour among employees.

The results suggest that Green Hard Talent Management (GHTM) has a significant influence on IWB, aligning with prior studies by Odugbesan et al. (2023), Umair et al. (2023), and Umair et al. (2022), which demonstrated that structured, administrative green HRM practices positively influence employees'

innovative work behavior. Similarly, Ogbeibu et al. (2021) provided further empirical support, highlighting that GHTM fosters innovation by incorporating structured performance evaluations, hierarchical processes, and strict environmental guidelines that push employees to develop creative solutions. The positive relationship between GHTM and IWB may stem from the fact that well-defined green HRM structures and accountability mechanisms drive employees toward innovative solutions in response to strict environmental performance expectations. This indicates that although green hard practices may initially seem rigid, they play a crucial role in fostering innovation through structured discipline and environmental accountability.

Similarly, contrary to expectations, the study found that green soft talent management (GSTM) does not significantly influence employees' IWB. This result contrasts with findings by Odugbesan et al. (2023), Umair et al. (2023), and Ogbeibu (2021), which indicated that GSTM positively influences IWB by enhancing employee motivation, autonomy, and collaboration in green initiatives. These studies emphasize the importance of human capital and inclusive decision-making in fostering innovation. However, the present study aligns with the findings of Umair et al. (2022), which also found no significant direct relationship between GSTM and IWB. A possible explanation is that while GSTM provides a supportive and flexible work environment, it may not directly drive employees toward innovative behaviors unless accompanied by strong leadership and strategic direction. This suggests that other factors, such as transformational leadership or organizational incentives, may be necessary to translate soft talent management practices into innovation-driven actions.

Likewise, the study confirms that transformational leadership (TL) has a significant direct influence on IWB, supporting previous research by Karimi et al. (2022), Tan et al. (2021), and Afsar & Umrani (2020), who found that transformational leaders foster innovation by inspiring and empowering employees to engage in creative problem-solving and new idea implementation. Additionally, Odugbesan et al. (2023) concluded that TL exerts a significant influence on IWB, reinforcing the importance of leadership in shaping innovation-oriented behavior among employees.

However, these findings contradict Luthans (2000), who suggested that transformational leadership does not significantly impact IWB. Instead, he argued that recognizing employees' competencies, personal values, and contributions to the organization is a more effective means of enhancing performance. While Luthans' (2000) study highlights the role of personal recognition, the present findings suggest that leadership style itself plays a crucial role in fostering innovation, likely by encouraging employees to embrace new ideas, question assumptions, and pursue organizational sustainability goals.

Similarly, the study found that Transformational Leadership does not significantly mediate the relationship between Green Hard Talent Management and Innovative Work Behavior. This contradicts prior research by Odugbesan et al. (2023) and Umair et al. (2023), who concluded that TL plays a mediating role in fostering innovation within structured green HRM practices. Furthermore, Umair et al. (2023) found a positive influence of TL in the relationship between GHTM and IWB, suggesting that transformational leaders enhance employees' engagement with structured green policies by offering guidance, motivation, and strategic alignment with sustainability goals.

A potential explanation for this discrepancy is that while GHTM provides a structured, rule-based approach to green initiatives, transformational leadership may not necessarily alter the direct relationship between GHTM and innovation. Instead, employees may respond to structured green policies independently, without needing additional leadership support to drive innovation. This suggests that GHTM may already establish sufficient motivation for innovation through accountability measures and structured sustainability targets, making TL's mediating role less impactful.

Further, unlike GHTM, the study found that TL significantly mediates the relationship between Green Soft Talent Management and Innovative Work Behavior. This finding aligns with prior research by Umair et al. (2023) and Odugbesan et al. (2023), which concluded that TL enhances the effectiveness of GSTM by strengthening employees' engagement in green initiatives.

The results suggest that while GSTM alone does not directly drive innovation, its impact is amplified when combined with transformational leadership. Transformational leaders play a crucial role in translating soft talent management practices—such as inclusivity, well-being support, and team collaboration, into meaningful innovative behaviors. This is consistent with Chen and Chang (2015) and Peng et al. (2020), who emphasized that TL encourages employees to exceed environmental expectations by providing motivation, intellectual stimulation, and personal recognition. Likewise, Robertson (2018) highlighted that transformational leaders foster an open environment where employees feel empowered to share ideas and engage in collaborative problem-solving, reinforcing the present study's findings. These results suggest that while GSTM alone may not be sufficient to drive innovation, TL acts as a catalyst by encouraging employees to take initiative, experiment with new solutions, and implement sustainability-driven innovations.

Additionally, from a theoretical perspective, the study extends Social Exchange Theory (Blau, 1968) and Social Identity Theory (Ashforth & Mael, 1989) by demonstrating the role of green talent management and transformational leadership in shaping innovative work behavior. It contributes to the Transformational Leadership Theory (Bass, 1999) by confirming the significant role of leadership in fostering innovation, particularly in sustainability-driven environments.

Conclusion

This study highlights the complex interplay between green talent management, transformational leadership, and innovative work behavior. It confirms that green hard talent management directly drives innovation, while green soft talent management requires transformational leadership to be effective. Moreover, transformational leadership plays a crucial role in fostering innovation, though its mediating effect differs across green HRM practices. These insights contribute to the growing body of knowledge on sustainable workforce management and provide actionable recommendations for organizations seeking to enhance their innovation capabilities through green HRM and leadership strategies. These findings offer valuable insights for banks striving to foster innovation through talent management and leadership approaches, particularly within the idea of environmental sustainability initiatives. By understanding the differential effects of hard and soft green talent management practices, as well as the crucial role of transformational leadership, organizations can strategically align their efforts to cultivate a culture of innovation aligned with environmental objectives.

Implications

The findings of this study provide valuable insights for managers, policymakers, and human resource professionals in the banking sector, particularly in fostering green talent management and transformational leadership to drive innovative work behavior. Given the increasing emphasis on sustainability and environmental responsibility, organizations must develop strategic approaches to integrate green HRM practices and leadership development initiatives that enhance employee engagement, innovation, and long-term organizational performance. Recognizing employees with green skills and environmental commitments as key organizational assets is essential. Organizations should support, develop, and reward employees who actively engage in green initiatives, fostering a workplace culture that values environmental sustainability. This, in turn, will not only motivate employees but also nurture their innovative work behavior.

To achieve this, organizations should implement structured green HRM strategies within their recruitment, training, and performance management systems. Green recruitment should focus on attracting environmentally conscious employees, while green training and development programs should enhance employees' sustainability knowledge and skills. Additionally, incorporating green performance management systems into employee evaluations and rewards can reinforce sustainability-driven behaviors. A strong organizational culture that supports sustainability is also crucial. Setting clear environmental goals, providing resources, and recognizing employees' contributions to green initiatives will encourage participation and drive engagement with sustainable practices. Encouraging employees to actively engage

in green projects can help cultivate a culture of innovation while reinforcing sustainability as a core organizational value.

Given the mediating role of transformational leadership, organizations must cultivate leadership approaches that inspire and guide employees toward sustainability-driven innovation. Leaders should mentor employees, encourage creative problem-solving, and integrate green values into strategic decision-making. Investing in leadership development programs that focus on transformational leadership skills, along with mentorship and skill development initiatives, will help strengthen the relationship between green talent management and innovative work behavior. Furthermore, while structured green hard talent management practices can directly drive innovation, organizations must ensure they remain flexible and adaptable. A rigid approach may limit employees' creative potential, whereas a balanced strategy allows them the freedom to explore innovative green solutions. Green soft talent management, when supported by transformational leadership, can play a crucial role in enhancing employee motivation and engagement with sustainability goals.

Policymakers also have a role in developing regulatory frameworks that promote green talent management across industries, particularly in the banking sector. Creating incentives for organizations that implement green HRM policies, establishing guidelines for sustainability-driven leadership development, and encouraging banks to align their HRM practices with global environmental standards can further strengthen green HRM adoption. From a practical standpoint, these findings highlight the importance of integrating green talent management strategies and transformational leadership to foster innovation in the banking sector. By strategically aligning green HRM practices with leadership development, organizations can create a work environment that not only prioritizes sustainability but also drives employee engagement, creativity, and competitive advantage.

Further Research Implications

This research provides valuable insights into green talent management practices and their relationship with innovative work behavior in banking sector. However, further research is needed to fully understand the socio-psychological dynamics at play. One key limitation is the study's narrow scope, as it primarily examines green talent management, transformational leadership, and innovative work behavior. Future research should incorporate additional factors such as environmental corporate social responsibility, sustainable performance, green creativity, and employee retention for a more comprehensive understanding. Additionally, demographic variables like age, education, gender, and income should be explored as potential moderators to assess their influence on employees' engagement with green HRM practices. Expanding the research to other industries would also improve generalizability and provide a broader perspective on how green HRM and leadership strategies foster innovation across different organizational contexts.

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Annexure 1. Crossloading matrix

	ATF	EE	EI	EP	ESE	SS
ATF1	0.717	0.106	0.042	0.049	0.186	0.074
ATF2	0.785	0.053	-0.047	0.006	0.126	0.152
ATF3	0.799	0.112	0.05	0.115	0.252	0.185
ATF4	0.775	0.055	-0.033	0.002	0.106	0.143
EE1	0.109	0.803	0.459	0.554	0.475	0.351
EE2	0.195	0.658	0.251	0.392	0.359	0.25
EE3	0.109	0.828	0.417	0.524	0.459	0.383
EE4	0.061	0.844	0.443	0.6	0.51	0.301
EE5	0	0.808	0.409	0.522	0.493	0.321
EE6	0.093	0.807	0.411	0.543	0.541	0.369
EI1	0.104	0.337	0.78	0.415	0.43	0.446
EI2	0.038	0.428	0.861	0.547	0.426	0.486
EI3	0.034	0.456	0.876	0.575	0.48	0.534
EI4	0.01	0.436	0.842	0.532	0.45	0.519
EI5	-0.019	0.489	0.836	0.507	0.428	0.546
EI6	-0.09	0.389	0.811	0.482	0.395	0.452
EP1	0.007	0.556	0.535	0.802	0.489	0.309
EP2	-0.018	0.61	0.57	0.823	0.518	0.355
EP3	0.093	0.519	0.457	0.788	0.457	0.297
EP4	0.027	0.466	0.582	0.812	0.469	0.38
EP5	0.08	0.391	0.408	0.706	0.402	0.217
EP6	0.162	0.339	0.261	0.512	0.362	0.123
EP7	0.204	0.284	0.205	0.541	0.283	0.179
EP8	0.039	0.533	0.437	0.735	0.418	0.27
EP9	-0.003	0.521	0.355	0.689	0.376	0.266
ESE1	0.306	0.185	0.187	0.152	0.479	0.259
ESE2	0.164	0.436	0.334	0.405	0.7	0.31
ESE3	0.201	0.532	0.497	0.528	0.843	0.366
ESE4	0.086	0.304	0.373	0.391	0.719	0.278
ESE6	0.142	0.564	0.395	0.515	0.764	0.38
SS1	0.129	0.279	0.385	0.269	0.357	0.692
SS2	0.135	0.195	0.358	0.195	0.315	0.71
SS3	0.15	0.193	0.355	0.253	0.296	0.694
SS4	0.18	0.21	0.319	0.113	0.236	0.686
SS5	0.133	0.51	0.526	0.429	0.473	0.78
SS6	0.183	0.281	0.453	0.254	0.356	0.795
SS7	0.166	0.259	0.477	0.251	0.195	0.683
SS8	0.018	0.337	0.467	0.327	0.283	0.66

