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Knowledge Sharing Paradox in Green HRM: Dual Effects on Compensation and Employee Involvement for SDGs

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Abstract

Knowledge management literature overwhelmingly portrays knowledge sharing as universally beneficial for organizational outcomes. This study challenges this assumption by uncovering a paradox: extensive green knowledge sharing (GKS) can simultaneously amplify certain human resource management practices while undermining others. Drawing on data from 414 faculty members across four Saudi public universities and employing moderation analysis within a Partial Least Squares Structural Equation Modeling framework, we examine how GKS differentially moderates the relationships between two contrasting green HRM practices (employee involvement and compensation) and sustainable development goals (SDGs) achievement. Results reveal striking asymmetry: GKS positively moderates the compensation-SDGs relationship (β = 0.087, p = 0.015), creating synergy between formal rewards and informal learning. However, GKS negatively moderates the involvement-SDGs relationship (β = -0.120, p = 0.023), revealing that extensive knowledge exchange can undermine participatory governance. We theorize five mechanisms explaining this paradox: information overload, substitution effects, diffusion of responsibility, coordination costs, and focus displacement. Grounded in Social Exchange Theory and the Ability-Motivation-Opportunity framework, this research demonstrates that knowledge sharing effectiveness depends fundamentally on the nature of the focal HRM practice. For transactional, criterion-based practices like compensation, knowledge sharing enhances effectiveness by clarifying reward pathways. For relational, participatory practices like employee involvement, excessive knowledge exchange creates cognitive burden and crowds out formal participation. This

study contributes to knowledge management theory by identifying boundary conditions of knowledge sharing benefits, advances contingency perspectives in green HRM research, and offers practical guidance for calibrating knowledge systems to complement rather than compete with participatory structures. Our findings carry profound implications for universities and organizations pursuing sustainability: more knowledge sharing is not always better, and strategic restraint may prove more effective than maximalist information exchange.
Keywords: Green Knowledge Sharing, Green HRM, Employee Involvement, Compensation Systems, SDGs, Higher Education

Introduction

Knowledge sharing occupies a privileged position in organizational scholarship. For decades, researchers have championed information exchange as categorically beneficial enhancing learning, innovation, and performance (Nonaka & Takeuchi, 1995; Argote & Ingram, 2000; Wang & Noe, 2010). This 'universality assumption' permeates both academic discourse and managerial practice, leading organizations to maximize knowledge-sharing systems under the belief that more is invariably better. Knowledge management platforms proliferate, communities of practice expand, and information channels multiply all premised on the conviction that knowledge circulation creates value.

However, emerging critical perspectives challenge this orthodoxy. Scattered evidence suggests knowledge sharing can impose costs: information overload (Eppler & Mengis, 2004), coordination burdens (Hansen, 1999), strategic knowledge hiding (Connelly et al., 2012), and performance decrements under certain conditions (Haas & Hansen, 2007). These insights remain fragmented, lacking integration into comprehensive theoretical frameworks that specify when and why knowledge sharing becomes counterproductive.

This study addresses this gap by examining how green knowledge sharing (GKS) the exchange of environmental information, practices, and innovations moderates the effectiveness of green human resource management (GHRM) practices in advancing sustainable development goals (SDGs). We focus specifically on two contrasting practices: employee involvement in environmental governance and compensation systems rewarding sustainability contributions. These practices represent fundamentally different exchange mechanisms participatory-relational versus transactional-individual creating divergent interactions with knowledge-sharing dynamics.

Our empirical investigation, based on 414 faculty members at four leading Saudi public universities, uncovers a striking paradox: extensive knowledge sharing amplifies compensation effectiveness ($\beta = 0.087$, $p = 0.015$) while simultaneously undermining involvement effectiveness ($\beta = -0.120$, $p = 0.023$). This asymmetry challenges the universality assumption and necessitates theoretical refinement of both knowledge management and strategic HRM frameworks.

We label this phenomenon the Knowledge Sharing Paradox: a counterintuitive pattern whereby the same knowledge-management approach simultaneously enhances and hinders organizational practices depending on their underlying exchange dynamics. To explain this paradox, we propose five mechanisms rooted in cognitive psychology and social exchange

theory: information overload, substitution effects, diffusion of responsibility, coordination costs, and focus displacement. These mechanisms operate selectively activating for participatory practices while remaining dormant for transactional approaches.

This study is motivated by the persistent assumption in knowledge management literature that knowledge sharing is universally beneficial, despite emerging evidence suggesting that it may also produce unintended negative consequences under certain conditions.

This study makes several important contributions to the literature. First, it challenges the prevailing universality assumption in knowledge management by demonstrating that knowledge sharing can generate both positive and negative effects simultaneously. Second, it introduces and theorizes the Knowledge Sharing Paradox, offering a novel conceptual lens for understanding the boundary conditions of knowledge-sharing effectiveness. Third, it advances contingency perspectives in green HRM by identifying knowledge sharing as a critical moderating factor that shapes the effectiveness of different HRM practices. Finally, it provides actionable insights for universities and organizations seeking to align HRM systems with sustainability objectives, emphasizing the importance of strategically calibrating knowledge sharing processes rather than maximizing them indiscriminately.

Theoretical Background and Hypotheses

The Universality Assumption in Knowledge Management

Knowledge management scholarship traditionally positions knowledge sharing as unequivocally beneficial. Nonaka and Takeuchi's (1995) seminal theory of organizational knowledge creation emphasizes continuous knowledge conversion cycles. Argote and Ingram's (2000) framework portrays knowledge transfer as foundational to competitive advantage. Meta-analytic evidence links knowledge sharing to innovation (Wang & Noe, 2010), team performance (Mesmer-Magnus & DeChurch, 2009), and organizational learning (Fong et al., 2018).

This dominant paradigm rests on implicit assumptions: more knowledge circulation improves decision-making quality, accelerates learning curves, enhances collective intelligence, and facilitates innovation. Accordingly, organizations invest heavily in knowledge management systems, communities of practice, information repositories, and communication platforms all designed to maximize information flow.

However, a growing critical stream questions this universality. Eppler and Mengis (2004) document information overload: excessive communication overwhelms cognitive capacity, degrading rather than enhancing decision quality. Hansen (1999) demonstrates that knowledge sharing imposes search and coordination costs that may exceed benefits when knowledge is complex or tacit. Haas and Hansen (2007) find that knowledge sharing harms team performance when time pressure is high or shared knowledge quality is low. Connelly et al. (2012) reveal strategic knowledge hiding as individuals protect valuable expertise.

Despite these insights, research has not systematically examined how knowledge sharing interacts with specific organizational practices to produce contingent outcomes. We address this gap by theorizing knowledge sharing as a moderator a contextual factor that alters the

strength or direction of relationships between HRM practices and organizational outcomes depending on practice characteristics.

Green HRM and Sustainability in Higher Education

Green Human Resource Management (GHRM) represents the integration of environmental sustainability into HRM functions (Renwick et al., 2013). Universities, as knowledge institutions and societal leaders, face mounting pressure to advance the United Nations' Sustainable Development Goals (SDGs) through both operational practices and educational missions (Leal Filho et al., 2019). GHRM offers a strategic lever for this transformation by shaping faculty environmental behaviors, capabilities, and commitment.

Among GHRM practices, we focus on two contrasting approaches: employee involvement and compensation systems. These practices embody fundamentally different exchange mechanisms and motivational logics, creating divergent interactions with knowledge-sharing dynamics.

Green employee involvement invites faculty to participate in environmental governance serving on sustainability committees, contributing to policy development, proposing green initiatives, and engaging in participatory decision-making (Renwick et al., 2013; Tang et al., 2018). This practice aligns with Social Exchange Theory's relational exchange dimension: participation creates reciprocal obligations and psychological ownership, motivating contributions beyond formal requirements (Blau, 1964). The Ability-Motivation-Opportunity (AMO) framework positions involvement as the 'opportunity' component, enabling faculty to apply their environmental abilities and motivation through meaningful engagement (Appelbaum et al., 2000).

Green compensation systems reward environmental contributions through formal incentives financial bonuses, recognition awards, career advancement criteria, and performance-based rewards (Tang et al., 2018; Nejati et al., 2017). This practice reflects Social Exchange Theory's transactional dimension: clear criteria and measurable outcomes create explicit exchange rules where specific behaviors earn predictable rewards (Blau, 1964). The AMO framework identifies compensation as a 'motivation' component, providing extrinsic incentives for sustainability engagement.

These contrasting mechanisms participatory-relational versus transactional-individual create divergent informational requirements. Involvement depends on focused attention, sustained engagement, and reduced cognitive load. Compensation requires clarity about reward criteria, transparency regarding evaluation, and knowledge of success pathways. These differences, we theorize, lead knowledge sharing to affect the two practices asymmetrically.

Green Knowledge Sharing in Academic Contexts

Green knowledge sharing (GKS) refers to the exchange of environmental information, best practices, innovations, and expertise among organizational members (Rubel et al., 2021; Lin & Chen, 2017). In university contexts, GKS manifests through faculty discussions about sustainable teaching methods, circulation of environmental research findings, sharing of green campus practices, exchange of community engagement strategies, and informal learning networks around sustainability topics.

Conventional wisdom suggests GKS universally enhances GHRM effectiveness by accelerating learning, reducing duplication, building collective consciousness, and facilitating innovation diffusion (Zibarras & Coan, 2015). However, we propose that GKS effectiveness depends critically on compatibility with the focal HRM practice's exchange logic and informational requirements.

For transactional practices like compensation, knowledge sharing should create synergy by clarifying reward criteria, sharing success strategies, and making evaluation processes transparent. For relational practices like involvement, extensive knowledge sharing may prove counterproductive by creating information overload, substituting for formal participation, diffusing individual responsibility, increasing coordination complexity, and displacing attention from governance to informal exchange.

Hypotheses Development

GKS Amplifies Compensation Effectiveness

Compensation systems operate through explicit exchange rules: specific behaviors earn measurable rewards. However, effectiveness depends on faculty understanding these rules. Ambiguity about criteria, confusion regarding evaluation methods, or uncertainty about reward timing can undermine motivation (Gerhart & Fang, 2015).

Knowledge sharing resolves these informational gaps. Faculty exchange experiences: 'Publishing in sustainability journals counted toward my green performance evaluation.' They share strategies: 'Documenting community partnerships increased my recognition score.' They collectively interpret systems: 'The university values waste reduction more than energy conservation.' This information circulation creates transparency that amplifies compensation's motivational effects.

Moreover, knowledge sharing creates social accountability. When reward recipients and criteria are publicly visible through shared information, social comparison and peer recognition add normative pressure beyond extrinsic motivation. Faculty not only pursue rewards for material gain but also to maintain status within knowledge-sharing networks.

Accordingly, we hypothesize

H1: Green knowledge sharing positively moderates the relationship between green compensation and SDGs achievement, such that compensation's positive effect strengthens when knowledge sharing is high.

GKS Undermines Involvement Effectiveness: The Knowledge Sharing Paradox

Employee involvement operates through participatory governance: faculty serve on committees, contribute to policy development, and engage in collective decision-making. Effectiveness depends on focused engagement, sustained commitment, and cognitive capacity to process diverse perspectives. We theorize five mechanisms through which extensive knowledge sharing undermines involvement:

- Information Overload: Faculty face escalating information demands. Extensive GKS circulating through email lists, workshops, online platforms, informal networks floods cognitive capacity. When invited to participate in sustainability committees, faculty

already overwhelmed with environmental information may decline or engage superficially. The involvement opportunity becomes another burden rather than meaningful engagement (Eppler & Mengis, 2004).

- Substitution Effects: Informal knowledge exchange may substitute for formal involvement. Faculty actively sharing environmental knowledge through networks may perceive committee participation as redundant offering similar opportunities to discuss ideas and influence peers but requiring additional time for meetings and documentation. Why serve on a task force when already embedded in intellectually stimulating knowledge networks? (Hansen, 1999).
- Diffusion of Responsibility: When environmental knowledge is widely shared, individual accountability weakens. Faculty know colleagues are equally informed, reducing personal responsibility: 'Everyone knows about this issue, so someone else will address it.' Shared awareness paradoxically reduces individual motivation to engage in governance (Latané & Darley, 1970).
- Coordination Costs: Extensive knowledge sharing exposes faculty to diverse sustainability approaches and priorities. When these viewpoints converge in participatory forums, reaching consensus becomes challenging. Committees spend time reconciling different knowledge bases, making coordination costs exceed substantive governance work (Hansen, 1999).
- Focus Displacement: Knowledge exchange offers immediate intellectual gratification sharing articles, debating concepts, learning practices feels productive. Committee work involves bureaucratic processes and slower decision-making. Faculty may unconsciously shift sustainability engagement toward more rewarding knowledge exchange, displacing participation in less satisfying but strategically important governance.

These mechanisms suggest that extensive knowledge sharing creates cognitive burden, provides alternative engagement channels, weakens individual accountability, increases coordination complexity, and diverts attention from formal participation. Accordingly:

H2: Green knowledge sharing negatively moderates the relationship between green employee involvement and SDGs achievement, such that involvement's positive effect weakens when knowledge sharing is high.

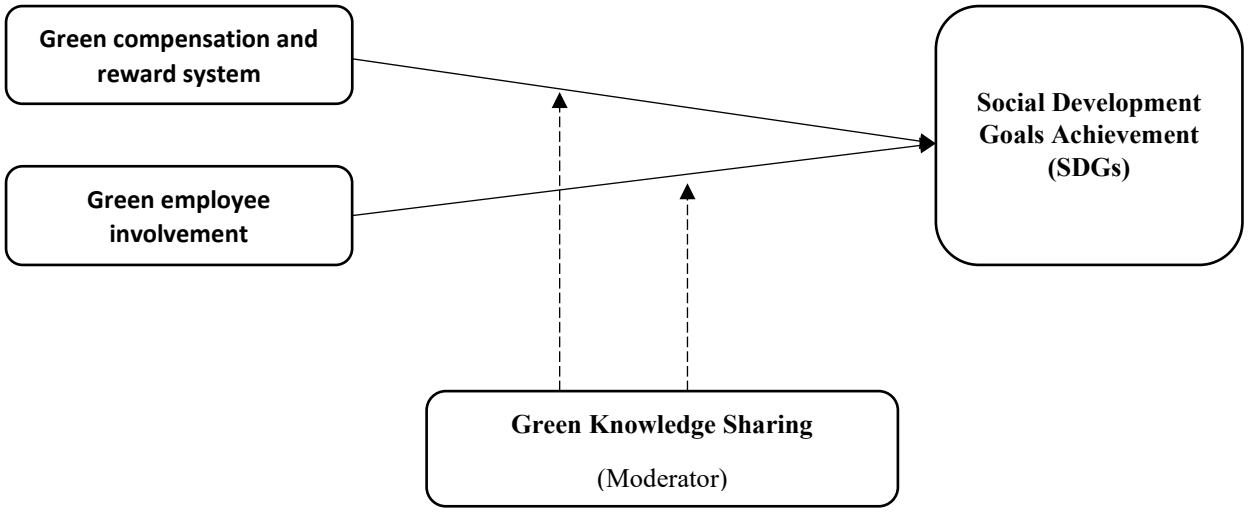

Figure 1. Research Framework

Research Methodology

Research Context and Sample

We examine Saudi public universities as strategic research sites. Saudi Arabia's Vision 2030 initiative positions higher education as central to national sustainability transformation, creating institutional imperative for green HRM adoption. The Kingdom's Green Saudi Initiative and Middle East Green Initiative provide governmental support for environmental efforts, making universities natural laboratories for studying sustainability practices.

We targeted faculty members at four leading institutions representing diverse geographic regions: King Abdulaziz University (Jeddah, western), King Saud University (Riyadh, central), King Fahd University of Petroleum and Minerals (Dhahran, eastern), and King Khalid University (Abha, southern). These universities collectively employ 19,269 faculty members (Ministry of Education, 2023), providing a substantial sampling frame.

Using Krejcie and Morgan's (1970) formula, we determined a minimum sample of 377. We employed stratified random sampling proportional to university size and administered an online questionnaire through institutional HR departments and direct faculty contacts. We obtained 421 responses (76.5% response rate). After removing seven outliers identified through Mahalanobis distance ($p < .001$), the final analytical sample comprised 414 valid cases (75.3% usable response rate), exceeding requirements from multiple sources: Krejcie and Morgan (377), G*Power analysis (262), and Hair et al. (2014) recommendations (220).

Table 1 presents the demographic profile of the study sample, and the sample exhibited strong diversity. Gender distribution: 65.9% male, 34.1% female. Age: 39.6% aged 56+, 36.2% aged 46-55, 14.5% aged 36-45, 9.7% aged 25-35. Academic ranks: 15.7% Professors, 41.1% Associate Professors, 19.3% Assistant Professors, 14.5% Lecturers, 9.4% Teaching Assistants. Experience: 61.4% with 10+ years, 24.2% with 5-10 years, 14.5% with under 5 years. Nationality: 60.1% non-Saudi, 39.9% Saudi, reflecting international academic character.

Table 1
Demographic Characteristics of the Sample

Demographic Variable	Category	Percentage (%)
Gender	Male	65.9
	Female	34.1
Age Group	25–35 years	9.7
	36–45 years	14.5
	46–55 years	36.2
	56 years and above	39.6
Academic Rank	Professor	15.7
	Associate Professor	41.1
	Assistant Professor	19.3
	Lecturer	14.5
	Teaching Assistant	9.4
Experience	Less than 5 years	14.5
	5–10 years	24.2
	More than 10 years	61.4
Nationality	Saudi	39.9
	Non-Saudi	60.1

Measurement Instruments
All constructs employed validated multi-item scales on five-point Likert scales (1 = strongly disagree, 5 = strongly agree). The questionnaire was professionally translated from English to Arabic and back-translated to ensure equivalence.
Green Employee Involvement (5 items, α = 0.952): Adapted from Tang et al. (2018), the original 6-item scale was refined by removing one item with a low loading during the measurement model evaluation.

Green Compensation (5 items, α = 0.896): Adapted from Tang et al. (2018) and Nejati et al. (2017), assessing reward systems incentivizing environmental performance.
Green Knowledge Sharing (6 items, α = 0.897): Adapted from Rubel et al. (2021), Chennamaneni and Teng (2012), and Lin and Chen (2017), evaluating faculty exchange of environmental information and practices.

Social Development Goals Achievement (6 items, α = 0.913): Adapted from Gericke et al., (2019); Al-Naqbi & Alshannag, (2018), assessing institutional progress toward sustainability including social equity, community engagement, and environmental stewardship.

Data Analysis Strategy
We employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 3 (Ringle et al., 2015). PLS-SEM suits this study because it: (1) accommodates complex models with interaction terms, (2) makes minimal distributional assumptions, and (3) maximizes explained variance, aligning with predictive objectives (Hair et al., 2022).

Analysis proceeded in two phases. First, we assessed the measurement model. Internal consistency was evaluated using Cronbach's alpha (> 0.70) and composite reliability (CR > 0.70). Convergent validity was confirmed through average variance extracted (AVE > 0.50)

and standardized loadings (> 0.70). Discriminant validity was tested via Fornell-Larcker criterion, HTMT ratios (< 0.85), and cross-loadings.

Second, we evaluated the structural model to test hypotheses. Interaction terms were created using the two-stage approach (Hair et al., 2022). Path significance was assessed through bootstrapping with 1,000 resamples, generating t-statistics and bias-corrected confidence intervals. We calculated effect sizes (f^2) and predictive relevance (Q^2) through blindfolding.

To address common method variance (CMV), we implemented procedural remedies: anonymity assurance, item separation, and scale clarity (Podsakoff et al., 2003). Harman's single-factor test revealed the first factor explained 40.4% of variance (< 50% threshold), indicating CMV was not a serious concern.

Multicollinearity was assessed through variance inflation factors (VIF < 3.0), confirming no problematic collinearity. Normality was examined via skewness and kurtosis (within ± 2), supporting PLS-SEM appropriateness.

Results

Measurement Model Assessment

Table 2 presents measurement model results. All constructs demonstrated excellent internal consistency: Cronbach's alpha values ranged from 0.896 to 0.952, and composite reliability from 0.906 to 0.961. Convergent validity was firmly established: all AVE values exceeded 0.50 (range: 0.637 to 0.839), and standardized loadings ranged from 0.688 to 0.948.

Discriminant validity was confirmed through multiple criteria. The Fornell-Larcker criterion was satisfied: the square root of each construct's AVE exceeded its correlations with other constructs. HTMT ratios ranged from 0.262 to 0.535, all below the 0.85 threshold. Cross-loadings showed each indicator loaded most strongly on its intended construct. These results provide strong evidence of construct validity.

Table 2
Measurement Model Results

Construct	Items	α	CR	AVE
Green Involvement	5	0.952	0.961	0.839
Green Compensation	5	0.896	0.906	0.709
Green Knowledge Sharing	6	0.897	0.913	0.637
SDGs Achievement	6	0.913	0.922	0.698

Note: α = Cronbach's alpha; CR = Composite reliability; AVE = Average variance extracted. All values exceed recommended thresholds.

Descriptive Statistics and Correlations

Descriptive statistics revealed moderate to high means. Green compensation exhibited the highest mean (M = 4.29, SD = 0.83), suggesting faculty perceive reward systems as well-developed. Green knowledge sharing scored highly (M = 4.40, SD = 0.51), indicating active

information exchange. SDGs achievement was rated favorably (M = 4.12, SD = 0.89). Green involvement showed the lowest mean (M = 2.80, SD = 1.44) with highest variance, suggesting substantial variability in participatory opportunities.

Correlation analysis showed both practices positively correlated with SDGs (Involvement: r = .50, p < .01; Compensation: r = .46, p < .01). However, GKS exhibited weak correlations with involvement (r = .24) and compensation (r = .28), foreshadowing the moderation patterns. These preliminary results suggest direct effects exist but substantial variance remains unexplained, potentially moderated by knowledge-sharing dynamics.

Hypothesis Testing: Moderation Analysis

Before examining moderation, we established main effects. Green involvement positively predicted SDGs (β = 0.089, t = 2.647, p = .008), confirming its beneficial influence. Green compensation showed a positive but non-significant direct effect (β = 0.059, t = 1.215, p = .225), suggesting its influence may be primarily moderated rather than direct.

Table 3 presents moderation analysis results, revealing the Knowledge Sharing Paradox in stark empirical clarity.

Table 3

Moderation Analysis Results

Hypothesis	β	t-value	p-value	Result
H1: GKS × Compensation → SDGs	0.087	2.448	0.015	Supported
H2: GKS × Involvement → SDGs	-0.120	2.278	0.023	Supported

Note: GKS = Green Knowledge Sharing; SDGs = Social Development Goals Achievement. Both hypotheses supported. Bootstrapping based on 1,000 resamples.

Hypothesis 1 received strong support. The GKS × Compensation interaction was positive and significant (β = 0.087, t = 2.448, p = .015), indicating compensation systems become more effective when knowledge sharing is robust. When GKS is high, faculty better understand reward criteria, share success strategies, and collectively learn how to earn incentives. This creates a learning loop where formal rewards and informal knowledge flows reinforce each other.

Hypothesis 2 also received support, revealing the Knowledge Sharing Paradox. The GKS × Involvement interaction was negative and significant (β = -0.120, t = 2.278, p = .023), demonstrating that extensive knowledge sharing weakens involvement's positive effect on SDGs. This counterintuitive finding suggests that when faculty are inundated with environmental information through knowledge-sharing channels, they become less likely to engage meaningfully in formal governance structures.

The magnitude of the negative moderation (β = -0.120) actually exceeds the positive moderation (β = 0.087), suggesting that knowledge sharing's detrimental effects on involvement may be stronger than its beneficial effects on compensation. This asymmetry underscores the paradox's practical significance: organizations must carefully calibrate knowledge systems to avoid undermining participatory practices while leveraging synergies with transactional approaches.

Discussion

Understanding the Knowledge Sharing Paradox

The negative moderation of GKS on the involvement-SDGs relationship constitutes this study's most striking and theoretically significant finding. This result directly challenges knowledge management's universality assumption and demands explanation. We propose that five interconnected mechanisms operate to transform knowledge sharing from benefit to burden in participatory contexts.

Information overload emerges as the most direct mechanism (Eppler & Mengis, 2004). Contemporary academics face escalating demands: teaching preparation, research productivity, grant applications, student advising, departmental service, and now sustainability initiatives. Layering extensive knowledge-sharing systems atop these burdens creates cognitive strain. Faculty process environmental information through multiple channels email lists announcing green workshops, online platforms sharing best practices, informal networks discussing sustainability research, committee reports circulating campus-wide. Each channel individually seems valuable, but collectively they overwhelm processing capacity.

When invited to join sustainability committees requiring meeting attendance, document review, and deliberative engagement faculty already saturated with environmental information decline or participate superficially. The involvement opportunity becomes another demand rather than meaningful engagement. This explains why GKS correlates weakly with involvement ($r = .24$): extensive information exchange fills cognitive space that formal participation requires.

Substitution effects suggest informal knowledge exchange and formal governance serve overlapping functions (Hansen, 1999). Faculty embedded in robust knowledge-sharing networks discuss sustainability challenges, debate policy options, and influence peers' thinking activities resembling committee work but without bureaucratic overhead. Participating in formal governance may seem redundant: 'I'm already contributing through knowledge networks; why attend another meeting?' This substitution operates unconsciously. Faculty perceive themselves as sustainability-engaged through information exchange, reducing motivation for formal participation that feels less intellectually stimulating and more administratively burdensome.

Diffusion of responsibility manifests when environmental knowledge becomes widely shared (Latané & Darley, 1970). Classic bystander effect research demonstrates that as more people witness an emergency, individual intervention probability decreases everyone assumes someone else will act. Analogously, when sustainability knowledge circulates extensively, faculty know colleagues are equally informed. This shared awareness paradoxically weakens individual accountability: 'Everyone knows about campus waste problems, so someone else will address it in committee.' Formal involvement requires personal commitment and visibility; extensive knowledge sharing dilutes both by distributing awareness without concentrating responsibility.

Coordination costs escalate when diverse knowledge bases must integrate in participatory forums (Hansen, 1999). Extensive knowledge sharing exposes faculty to multiple

sustainability frameworks: carbon footprint reduction, social equity initiatives, biodiversity conservation, circular economy principles, community partnerships. When these diverse perspectives converge in committees, reaching consensus becomes challenging. Meetings spend time reconciling different knowledge bases, resolving contradictions, and negotiating among competing priorities. These coordination demands can overwhelm substantive governance work, making involvement feel frustratingly inefficient. Faculty withdraw when coordination costs exceed perceived benefits.

Focus displacement occurs as knowledge exchange activities compete for attention with formal involvement. Academic culture prizes intellectual discourse. Sharing an article, debating a sustainability concept, or learning a new practice feels immediately productive and intellectually rewarding. Committee work involves bureaucratic processes, documentation requirements, and slower decision-making. Faculty may unconsciously shift sustainability engagement toward more intrinsically gratifying knowledge exchange, displacing participation in less immediately satisfying but strategically important governance structures. This displacement operates subtly: faculty feel actively engaged with sustainability through information exchange, unaware they're avoiding more impactful formal participation.

The Synergistic Effect: Knowledge Amplifies Compensation

The positive moderation of GKS on the compensation-SDGs relationship reveals a contrasting dynamic where knowledge sharing enhances rather than hinders effectiveness. This synergy stems from fundamental differences in practice characteristics and informational requirements.

Compensation systems operate through explicit exchange rules: specific behaviors earn measurable rewards. However, effectiveness depends critically on clarity. Without robust knowledge sharing, faculty face uncertainty: Which behaviors count? How are contributions evaluated? What evidence is required? When are rewards distributed? This ambiguity undermines motivation (Gerhart & Fang, 2015).

Knowledge sharing resolves these informational gaps by creating transparency. Faculty exchange experiences: 'I received a sustainability bonus for reducing lab waste 40%.' They share strategies: 'Publishing in environmental journals counted heavily in my green performance review.' They collectively interpret systems: 'The university values community partnerships more than internal energy conservation.' This circulation creates learning loops where successful strategies diffuse, criteria become understood, and pathways to rewards become clear.

Moreover, knowledge sharing adds social accountability. When reward recipients and criteria become publicly visible through shared information, social comparison and peer recognition supplement extrinsic motivation. Faculty pursue rewards not only for material gain but also to maintain status within knowledge-sharing networks. This normative pressure amplifies compensation's effectiveness beyond formal incentive structures.

The compensation-knowledge sharing synergy suggests that GKS effectiveness depends on compatibility with the focal practice's informational requirements. Compensation thrives on clear, explicit, shareable information about criteria, evaluation, and outcomes. Involvement

requires focused attention, sustained commitment, and reduced cognitive load qualities undermined by extensive information exchange. This insight advances contingency perspectives in both knowledge management and HRM research.

Theoretical Contributions

This study advances theory across multiple domains by challenging core assumptions, theorizing specific mechanisms, and revealing contingencies.

First, we challenge the universality assumption dominating knowledge management literature (Nonaka & Takeuchi, 1995; Argote & Ingram, 2000). For decades, scholars positioned knowledge sharing as categorically beneficial. Our findings demonstrate that extensive information exchange can undermine organizational practices depending on their characteristics. This contributes to emerging discourse on knowledge management's 'dark side' (Haas & Hansen, 2007; Mäkelä & Brewster, 2009) by providing large-scale quantitative evidence of boundary conditions.

Second, we theorize five specific mechanisms through which knowledge sharing becomes counterproductive: information overload, substitution effects, diffusion of responsibility, coordination costs, and focus displacement. These mechanisms offer testable propositions for future research. They may operate individually or jointly, creating complex interaction patterns. Importantly, these mechanisms are not universal they activate for participatory-relational practices but remain dormant for transactional approaches.

Third, we extend contingency theories of green HRM by identifying knowledge management as a critical moderating factor. Previous contingency research emphasized organizational culture, leadership, and industry context (Jackson et al., 2014). We demonstrate that knowledge-sharing systems represent another contingency one that can amplify or attenuate practice effectiveness depending on fit with the focal practice's exchange logic. This enriches understanding of when and why GHRM works.

Fourth, we bridge micro (individual) and meso (organizational) levels of analysis. Individual cognitive load, social comparison, and attention allocation interact with organizational systems (HRM practices, knowledge management) to produce outcomes. This multi-level integration enriches theoretical understanding beyond single-level frameworks.

Finally, we extend green HRM research into higher education contexts. Most GHRM studies examine manufacturing or service industries. Universities present unique dynamics: high autonomy, professional norms, knowledge intensity. Our findings suggest that academic settings may be especially vulnerable to information overload and focus displacement given their inherently knowledge-intensive nature. This contextual extension enriches GHRM theory's scope.

Practical Implications

For university leaders and HR professionals, these findings offer important insights into designing sustainable human resource systems that align with Saudi Vision 2030 and the University Sustainability Framework (2023). The results caution against an uncritical “more is better” mentality particularly the tendency to expand both knowledge-sharing networks and participatory structures without coordination. Instead, universities should

strategically calibrate their systems to balance openness with cognitive and organizational efficiency.

First, curate knowledge sharing to prevent overload. Rather than maximizing information circulation, prioritize quality over quantity. Designate central clearinghouses for environmental information, avoid redundant communication channels, and respect faculty attention as scarce. Periodic summaries may serve better than constant updates. Universities should audit existing knowledge-sharing channels newsletters, email lists, workshops, online platforms and consolidate redundant streams.

Second, differentiate knowledge sharing from formal involvement. Make clear these are complementary but distinct engagement modes. Knowledge sharing involves receiving and transmitting information; involvement entails decision-making authority and governance responsibility. Clarifying this distinction may prevent substitution effects. Communications should emphasize: 'Staying informed through knowledge networks complements but cannot replace formal governance participation.'

Third, streamline participatory structures to reduce coordination costs. When knowledge sharing reveals diverse perspectives, formal forums must efficiently synthesize input rather than becoming bogged down. Structured decision-making protocols, clear agendas, and skilled facilitation become critical. Pre-meeting materials should summarize key viewpoints, allowing meetings to focus on decision-making rather than information exchange.

Fourth, leverage knowledge sharing to amplify compensation systems. Since our results show synergy here, ensure that reward criteria, success stories, and recognition circulate widely. This creates transparency and social accountability that magnify incentive effects. Develop dedicated channels for sharing compensation-related information: 'Sustainability Awards Spotlight' highlighting recipients and their contributions.

Fifth, monitor for paradox indicators: declining committee participation despite high knowledge-sharing activity, faculty reporting feeling overwhelmed by sustainability information, governance meetings characterized by excessive debate and little decision-making, or faculty expressing preference for informal discussion over formal participation. These signals suggest knowledge sharing has exceeded optimal levels and requires calibration.

Finally, adopt systems thinking. Rather than implementing practices in isolation, consider how they interact with knowledge management and each other. This requires coordination across HR, sustainability offices, faculty governance, and academic leadership an organizational challenge but essential for effectiveness.

Limitations and Future Research Directions

Study Limitations

Several limitations warrant acknowledgment. First, the cross-sectional design precludes definitive causal inferences. While theory suggests GKS moderates HRM-SDGs relationships, alternative sequences remain plausible. Longitudinal research tracking changes in knowledge-sharing intensity and their temporal effects on involvement would strengthen causal claims.

Second, self-report data create potential for common method variance despite procedural remedies. Although statistical tests suggest CMV is not severe (Harman's test: 40.4%), future research should incorporate objective measures: actual participation rates, knowledge-sharing system usage logs, and institutional SDG indicators.

Third, the Saudi context may limit generalizability. The Kingdom's unique cultural values, rapid modernization under Vision 2030, and specific higher education structures may not transfer elsewhere. Cross-national replication is essential to determine whether the paradox is universal or culturally contingent.

Fourth, we measured constructs at aggregate levels without distinguishing knowledge types or quality. Does sharing simple factual information have different effects than sharing complex tacit knowledge? Does high-quality, curated knowledge differ from information overload? Future research should examine these distinctions.

Fifth, we proposed five mechanisms but did not directly test them. Determining which dominate, how they interact, and under what conditions they activate requires dedicated research. Qualitative studies could illuminate faculty subjective experiences, while experimental designs could isolate individual mechanisms.

Future Research Priorities

The Knowledge Sharing Paradox opens rich avenues for inquiry. We outline priority directions: Mechanism Testing: Design studies to test each proposed mechanism independently. Experimental manipulations could vary information load while holding participation constant, isolating overload effects. Survey research could measure perceived substitution directly. Multi-level modeling could examine whether individual (cognitive load) versus group-level (diffusion of responsibility) mechanisms dominate.

Boundary Conditions: Investigate when the paradox emerges versus disappears. Hypothesized moderators include organizational size (larger institutions may have greater specialization), governance maturity (established systems may manage diverse input better), cultural context (collectivist cultures may experience less diffusion), and faculty workload (overwhelmed individuals may be especially vulnerable).

Optimal Levels: Determine whether curvilinear relationships exist. Perhaps minimal knowledge sharing hinders coordination, moderate sharing optimizes learning, and excessive sharing triggers the paradox. Polynomial regression or response surface analysis could uncover non-linearities.

System Design: Examine how knowledge management characteristics centralization, push versus pull mechanisms, formal versus informal channels influence paradox occurrence. Self-service repositories may create less overload than mass distributions.

Individual Differences: Investigate whether personality traits, cognitive styles, or demographics moderate vulnerability. Faculty high in need for cognition might welcome extensive knowledge sharing, while those with lower processing preferences experience overload earlier.

Temporal Dynamics: Examine how relationships evolve. Initially, knowledge sharing may enhance involvement by building awareness. Over time, substitution and overload effects may emerge. Longitudinal designs would illuminate these trajectories.

Generalizability Testing: Replicate findings across contexts private universities, different countries, non-academic organizations, different HRM domains. Does the paradox apply to innovation-focused HRM, diversity initiatives, or quality management?

Collectively, these directions can deepen understanding of how knowledge ecosystems interact with HRM systems to shape sustainability outcomes. By integrating multi-level, cross-context, and longitudinal approaches, future research can illuminate not only when and why the Knowledge Sharing Paradox arises, but also how organizations can harness knowledge flows to advance the goals of Vision 2030 and the global sustainability agenda.

Conclusion

This study reveals a fundamental paradox at the intersection of knowledge management and strategic HRM: extensive knowledge sharing can simultaneously amplify certain practices while undermining others. Drawing on 414 faculty members at four Saudi public universities, we demonstrate that green knowledge sharing positively moderates compensation effectiveness but negatively moderates involvement effectiveness.

These findings challenge knowledge management's universality assumption and extend contingency theories of green HRM. We theorized five mechanisms explaining when knowledge sharing becomes counterproductive: information overload, substitution effects, diffusion of responsibility, coordination costs, and focus displacement. These mechanisms operate selectively activating for participatory practices while remaining dormant for transactional approaches.

The practical implications are clear: more is not always better. Universities must strategically calibrate knowledge-sharing systems to complement rather than compete with participatory governance. This requires curating information flows, differentiating knowledge exchange from formal involvement, streamlining coordination, and leveraging knowledge sharing selectively to amplify transactional practices like compensation.

The Knowledge Sharing Paradox offers broader lessons for organizational design. As institutions layer multiple “best practice” initiatives such as digital collaboration tools, participatory structures, and performance incentives these systems may inadvertently conflict. Effective sustainability governance requires not only implementing good practices but orchestrating their interaction. This systems perspective reflects a mature understanding of organizational complexity, consistent with the integrative vision promoted by Saudi Vision 2030.

For sustainability specifically, these findings carry urgency. As universities worldwide commit to SDGs, they naturally turn to both green HRM and knowledge sharing as strategic levers. Our research cautions that these levers, if poorly calibrated, may work at cross-purposes. Sustainability transformations require not just implementing best practices but orchestrating

them thoughtfully, recognizing trade-offs, and making difficult choices about where to focus limited faculty attention.

Looking ahead, the paradox invites theoretical refinement. Knowledge management scholars must move beyond universalistic assumptions toward contingency frameworks specifying when, how, and with whom knowledge should be shared. Green HRM researchers should incorporate knowledge processes as critical moderators. Organizational theorists more broadly should attend to how management systems interact, potentially creating unanticipated trade-offs.

We focused on faculty perceptions in Saudi universities a specific context. Whether the paradox generalizes remains empirical. We suspect it does, particularly in knowledge-intensive sectors facing sustainability pressures. But cross-national replication, longitudinal designs, objective measures, and mechanism-focused research are essential to establish generalizability and precision.

In closing, we return to the fundamental insight: knowledge sharing is not universally beneficial. This challenges decades of advocacy but aligns with emerging critical perspectives acknowledging organizational practices' 'dark sides.' As institutions grapple with complex challenges like sustainability, recognizing that even championed initiatives have boundaries proves essential.

Universities, as knowledge institutions, should be particularly attuned to this paradox. If organizations dedicated to knowledge creation can suffer from too much knowledge sharing, surely all institutions must recognize this possibility. The challenge lies not in abandoning knowledge sharing it remains vital but in pursuing it wisely, calibrated to contexts, integrated with other systems, and always mindful that even good things have limits. Strategic restraint may prove more effective than maximalist information exchange.

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References

Ali Khalfan Al-Naqbi, Qasim Alshannag, (2018) "The status of education for sustainable development and sustainability knowledge, attitudes, and behaviors of UAE University students", International Journal of Sustainability in Higher Education, https://doi.org/10.1108/IJSHE-06-2017-0091

Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. L. (2000). Manufacturing advantage: Why high-performance work systems pay off. Cornell University Press.

Argote, L., & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. Organizational Behavior and Human Decision Processes, 82(1), 150-169.

Blau, P. M. (1964). Exchange and power in social life. John Wiley & Sons.

Chennamaneni, A., & Teng, J. T. (2012). An integrated framework for effective tacit knowledge transfer. Proceedings of the Americas Conference on Information Systems.

Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations. Journal of Organizational Behavior, 33(1), 64-88.

Eppler, M. J., & Mengis, J. (2004). The concept of information overload: A review of literature. The Information Society, 20(5), 325-344.

Fong, P. S., Men, C., Luo, J., & Jia, R. (2018). Knowledge hiding and team creativity: The contingent role of task interdependence. Management Decision, 56(2), 329-343.

Gerhart, B., & Fang, M. (2015). Pay, intrinsic motivation, extrinsic motivation, performance, and creativity in the workplace. Compensation & Benefits Review, 47(3), 143-168.

Gericke, N., Boeve-de Pauw, J., Berglund, T., & Olsson, D. (2019). The Sustainability Consciousness Questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development. Sustainable Development, 27

Haas, M. R., & Hansen, M. T. (2007). Different knowledge, different benefits: Toward a productivity perspective on knowledge sharing. Strategic Management Journal, 28(11), 1133-1153.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). A primer on partial least squares structural equation modeling. Sage Publications.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). Sage Publications.

Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge. Administrative Science Quarterly, 44(1), 82-111.

Jackson, S. E., Renwick, D. W., Jabbour, C. J., & Muller-Camen, M. (2014). State-of-the-art and future directions for green human resource management. German Journal of Human Resource Management, 25(2), 99-116.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30(3), 607-610.

Latané, B., & Darley, J. M. (1970). The unresponsive bystander: Why doesn't he help? Appleton-Century-Crofts.

Leal Filho, W., Shiel, C., Paço, A., Mifsud, M., Ávila, L. V., Brandli, L. L., ... & Caeiro, S. (2019). Sustainable Development Goals and sustainability teaching at universities. Journal of Cleaner Production, 232, 285-294.

Lin, H. F., & Chen, C. H. (2017). Combining the technology acceptance model and uses and gratifications theory. Symmetry, 9(7), 113.

Mäkelä, K., & Brewster, C. (2009). Interunit interaction contexts, interpersonal social capital, and knowledge sharing. Human Resource Management, 48(4), 591-613.

Mesmer-Magnus, J. R., & DeChurch, L. A. (2009). Information sharing and team performance: A meta-analysis. Journal of Applied Psychology, 94(2), 535-546.

Ministry of Education. (2023). Higher education statistics. Kingdom of Saudi Arabia.

Nejati, M., Rabiei, S., & Jabbour, C. J. C. (2017). Envisioning the invisible: Understanding the synergy between green HRM and green supply chain management. Journal of Cleaner Production, 168, 1382-1391.

Nonaka, I., & Takeuchi, H. (1995). The knowledge-creating company. Oxford University Press.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research. Journal of Applied Psychology, 88(5), 879-903.

Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. International Journal of Management Reviews, 15(1), 1-14.

Ringle, C. M., Wende, S., & Becker, J. M. (2015). SmartPLS 3. Bönningstedt: SmartPLS.

Rubel, M. R. B., Kee, D. M. H., & Rimi, N. N. (2021). The influence of green HRM practices on green service behaviors: The mediating effect of green knowledge sharing. Employee Relations, 43(5), 996-1015.

Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices: Scale development and validity. Asia Pacific Journal of Human Resources, 56(1), 31-55.

Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. Human Resource Management Review, 20(2), 115-131.

Zibarras, L. D., & Coan, P. (2015). HRM practices used to promote pro-environmental behavior: A UK survey. The International Journal of Human Resource Management, 26(16), 2121-2142.