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How Trust Empowers Motivation and Knowledge Sharing to Improve Performance: A Moderated Mediation Model

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ABSTRACT

This study investigates the structural relationships among trust, motivation, knowledge sharing, and employee performance in the retail sector. Specifically, we examine how motivation and knowledge sharing mediate the impact of trust, while evaluating the conditional boundaries and essential prerequisites of these relationships. Author adopted a quantitative approach, surveying 154 retail employees. The data analysis utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the structural model, supplemented by Importance-Performance Map Analysis (IPMA) and Necessary Condition Analysis (NCA) to identify performance priorities and operational bottlenecks. The structural analysis reveals that trust exerts a powerful medium effect on knowledge sharing, which subsequently drives employee performance. Furthermore, NCA establishes trust as a critical, mandatory bottleneck (Strong Necessity) for maximizing performance, while motivation and knowledge sharing act as Moderate Necessity conditions that restrict peak outcomes if neglected. Retail managers must actively build organizational trust to dismantle information silos and unlock the positive benefits of employee motivation. To achieve superior performance targets, management should prioritize resources toward knowledge sharing during briefings and establish clear incentive structures to maintain high motivational ceilings. This study offers unique value by integrating PLS-SEM with advanced IPMA and NCA methodologies in a retail context. Rather than just examining linear relationships, this research uncovers the exact necessary thresholds and bottleneck values of trust and motivation required to achieve optimal employee productivity.

Keywords: Employee performance, Importance-Performance Map Analysis (IPMA), Knowledge sharing, Motivation, Necessary Condition Analysis (NCA).

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INTRODUCTION

Employee performance serves as the critical engine that drives operational success, customer satisfaction, and long-term sustainability within the highly competitive retail sector. In dynamic customer-facing environments, high-performing employees directly secure market share and build brand loyalty. According to Khan et al. (2024), frontline worker performance directly influences employee retention; when organizations implement robust compensation systems and continuous performance feedback, they actively motivate staff, lower turnover costs, and maintain service continuity. This frontline productivity depends heavily on strategic supervision, as Mohammad et al. (2022) demonstrate that supervisory leadership styles directly shape employee engagement and elevate individual execution on the retail floor.

Beyond interpersonal interactions, employee performance bridges the gap between organizational infrastructure and bottom-line efficiency. Kearney et al. (2023) emphasize that the physical work environment heavily influences employee well-being and daily output, showing that optimized retail workspaces empower staff to execute their tasks more effectively. When employees perform at their peak within an optimized environment, they seamlessly integrate with advanced corporate systems. As Kumar et al. (2023) highlight, high-performing teams successfully translate data-driven supply chain quality management practices into superior overall organizational performance. Ultimately, retail organizations achieve sustainable growth and operational agility only when they actively cultivate, support, and maximize the performance of their workforce.

To successfully navigate the volatile and rapidly evolving challenges of the modern retail sector, organizations must fundamentally transform their operational strategies, technological infrastructure, and human capital development. Retailers face unprecedented pressure from shifting consumer behaviors and intense market competition, making traditional workflows obsolete. Isharyani et al. (2024) emphasize that traditional retailers must urgently embrace retail technology adaptation; by utilizing the technology-to-performance chain perspective, firms can seamlessly integrate digital tools into daily operations to directly improve performance and survival rates. However, implementing technology alone is insufficient without cultivating the workforce's internal drive. To overcome complex operational hurdles, organizations must unlock worker ingenuity, as

Ranjit (2022) demonstrates that fostering intrinsic motivation directly stimulates employee creativity, which in turn elevates job performance and yields innovative problem-solving on the retail floor.

Although current literature extensively explores organizational behavioral drivers, existing research remains fragmented across different sectors and fails to establish the precise boundary thresholds needed to optimize employee productivity. For instance, Afridi et al. (2023) highlight how interpersonal trust activates extra-role behaviors, while Baquero (2023) demonstrates that trust in leadership bridges the gap between management styles and workplace well-being. However, these scholars limit their scope to general corporate responsibility and leadership perceptions, leaving a critical gap regarding how trust directly interacts with core behavioral mechanisms like knowledge sharing and intrinsic motivation within fast-paced operational settings.

Furthermore, current knowledge management literature does not fully capture the strategic interplay between psychological drives and actual performance metrics. While Nguyen et al. (2022) examine the multilevel influences on individual knowledge sharing behaviors under the lens of cultural and situational opportunities, they overlook how these behaviors translate directly into tangible performance outputs. Similarly, Kosklin et al. (2023) confirm that knowledge management practices generally improve performance within specialized fields like healthcare, but their systematic review exposes a lack of empirical clarity on how these systems function in highly dynamic customer-facing environments such as the retail sector.

Recent studies attempt to connect these dots by examining specific leadership and operational frameworks; for instance, Żywiołek et al. (2022) reveal that transformational leadership drives knowledge sharing to spark employee creativity, while Goswami and Agrawal (2023) demonstrate that ethical leadership promotes both knowledge sharing and creation through psychological capital. Additionally, Ahmad et al. (2023) show that strategic initiatives, like green HRM practices, leverage knowledge sharing to boost targeted environmental performance. Despite these insights, these authors focus heavily on specialized outcomes like creativity or green sustainability, leaving the broader, foundational link between knowledge sharing and core, day-to-day employee performance largely unexamined.

Consequently, a significant research gap emerges because scholars have yet to map these individual mechanisms into a comprehensive, non-linear framework. Current studies largely rely on traditional linear mediation models that merely establish whether relationships exist, leaving managers blind to the exact minimum levels of trust and motivation required to prevent operational failure. This study directly addresses this void by integrating Partial Least Squares

Structural Equation Modeling (PLS-SEM) with Importance-Performance Map Analysis (IPMA) and Necessary Condition Analysis (NCA). By doing so, we move beyond simple correlations to expose the precise structural thresholds and necessary bottlenecks of trust and motivation that dictate employee performance in the retail industry.

In today's highly competitive retail sector, organizations face intense pressure to maximize employee productivity and adapt to rapidly changing market demands. While conventional management often relies on direct performance incentives, empirical evidence suggests that these mechanisms fail when businesses lack foundational workplace relationships. Specifically, a critical gap exists in understanding how intangible cultural factors, such as organizational trust, directly activate internal psychological and behavioral drivers like motivation and knowledge sharing to ultimately elevate frontline performance. Without a reliable climate of trust, employees frequently withhold valuable market insights, and even highly motivated staff operate in isolated silos, which directly cripples the organization's collective efficiency.

Furthermore, traditional linear modeling approaches often obscure the practical realities of retail management by merely identifying correlations rather than operational thresholds. Managers struggle to determine the exact minimum requirements of trust and motivation needed to sustain daily targets versus those required to achieve peak operational performance. Consequently, retail companies frequently misallocate resources, over-investing in surface-level motivational programs while ignoring the underlying bottlenecks that restrict organizational growth. This research addresses these critical gaps by investigating the structural and non-linear boundaries of trust, motivation, and knowledge sharing, thereby establishing the precise necessary conditions required to unlock optimal employee performance within the retail industry.

METHOD

This study adopts a quantitative approach by surveying employees who work within the retail sector. To address the research problems, we employ a moderated mediation model to examine how motivation and knowledge sharing mediate the effect of trust on employee performance, while further testing the conditional processes of the model. We determined the minimum sample size using Hair et al. (2022) measurement approach; with a statistical power of 80% and a medium effect size, the framework required 142-155 samples, out of which 154 respondents successfully completed and returned the questionnaires. To measure the constructs, we adapted validated instruments from several

established sources. We measured the trust variable by referencing Mayer and Davis (1999) alongside Svare, Gausdal, and Möllering (2020), while we evaluated employee motivation using Ryan and Deci's (2020) Self-Determination Theory framework. Additionally, we adopted Yi's (2009) instrument to measure the knowledge sharing variable, and we assessed employee performance through the Innovative Work Behavior (IWB) scale developed by Koopmans et al. (2014). Although traditional retail roles rely on task execution, modern frontline retail environments increasingly require adaptive and innovative problem-solving to address immediate customer demands. Thus, assessing performance through innovative work behavior captures this dynamic operational output.

For the data analysis phase, we utilize Partial Least Squares Structural Equation Modeling (PLS-SEM), strictly following the outer loading, inner model, and criteria evaluation guidelines set by Hair et al. (2022). To provide more comprehensive and actionable managerial recommendations, we extend the structural model analysis. Specifically, we conduct an Importance-Performance Map Analysis (IPMA) alongside a Necessary Condition Analysis (NCA) to uncover both the performance priorities and the essential operational bottlenecks within the retail context.

RESULTS and DISCUSSION

The full collinearity VIF test at table 1 (Appendix) confirms that common method bias (CMB) does not pose a substantial threat to this study. Although a few specific indicators like KD2.3 (4.825) and TrD1.5 (4.337) slightly exceed the ideal 3.3 threshold, every single VIF value strictly remains below the critical multi-collinearity benchmark of 5.0. Therefore, researchers can safely conclude that common method variance does not distort the relationships within this model.

Table 2. HTMT Result

	Original sample (O)	Sample mean (M)	5.0%	95.0%
Knowledge Sharing <-> Employee Performance	0.766	0.770	0.681	0.857
Motivation <-> Employee Performance	0.722	0.725	0.611	0.826
Motivation <-> Knowledge Sharing	0.735	0.736	0.635	0.826
Trust <-> Employee Performance	0.689	0.690	0.596	0.776
Trust <-> Knowledge Sharing	0.780	0.779	0.680	0.862
Trust <-> Motivation	0.657	0.658	0.548	0.759

The outer model assessment demonstrates robust psychometric properties across all variables through strong convergent validity and internal consistency. Every item achieves an indicator loading above the 0.70 threshold, ranging from a low of 0.723 to a high of 0.874. Furthermore, all constructs comfortably surpass

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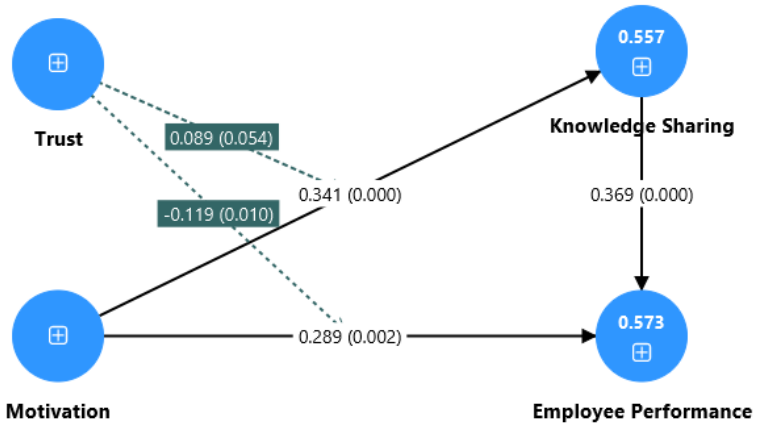


Figure 1. Model of Moderated Mediation Result

the 0.50 Average Variance Extracted (AVE) benchmark—led by Motivation at 0.684—and yield exceptionally high Cronbach's alpha values well above the minimum 0.70 standard (ranging from 0.907 to 0.957), which completely justifies proceeding to the structural model analysis.

The HTMT analysis at table 2 demonstrates robust discriminant validity across all constructs in the conceptual model. Methodologists state that HTMT values below the conservative threshold of 0.85 (or the more liberal threshold of 0.90) indicate distinct, non-overlapping variables. Looking at the original sample (O) values, every single construct correlation comfortably remains below 0.85, with the highest correlation appearing between Trust and Knowledge Sharing at 0.780,

Table 3. Path Result

	Coefficient	P values	f^2	5.0%	95.0%	Decision
Knowledge Sharing -> Employee Performance	0.369	0.000	0.141	0.229	0.517	Accept
Motivation -> Employee Performance	0.289	0.002	0.111	0.121	0.453	Accept
Motivation -> Knowledge Sharing	0.341	0.000	0.176	0.227	0.452	Accept
Trust -> Employee Performance	0.246	0.006	0.069	0.079	0.403	Accept
Trust -> Knowledge Sharing	0.462	0.000	0.309	0.338	0.575	Accept
Trust x Motivation -> Employee Performance	-0.119	0.010	0.032	-0.203	-0.036	Accept
Trust x Motivation -> Knowledge Sharing	0.089	0.054	0.018	-0.002	0.176	No Accept
Specific Indirect Effect						
Motivation -> Knowledge Sharing -> Employee Performance	0.126	0.130	0.043	2.946	0.002	Accept
Trust -> Knowledge Sharing -> Employee Performance	0.171	0.172	0.048	3.530	0.000	Accept
Trust x Motivation -> Knowledge Sharing -> Employee Performance	0.033	0.033	0.023	1.456	0.073	No Accept

followed by Knowledge Sharing and Employee Performance at 0.766. Furthermore, the bootstrapping results reinforce these findings through the confidence intervals (5.0% to 95.0%). In a statistically valid model, the upper confidence limit (95.0%) must not encompass the value of 1.00. The data perfectly satisfies this criterion, as the highest upper-bound value reaches only 0.862 for the Trust and Knowledge Sharing relationship. Therefore, researchers can confidently conclude that the measurement model establishes strong discriminant validity, meaning respondents successfully distinguished all four latent variables.

The structural model assessment at figure 1 and table 3 confirms that six out of seven proposed hypotheses exert a statistically significant influence within the model. Researchers evaluate path significance using the p-value benchmark (α= 0.05). Trust exerts the strongest direct positive effect on Knowledge Sharing (0.462, p = 0.000), followed closely by Knowledge Sharing's direct positive impact on Employee Performance (0.369, p = 0.000). Motivation also significantly drives both Knowledge Sharing (0.341, p = 0.000) and Employee Performance (0.289, p = 0.002), while Trust maintains a significant direct positive path to Employee Performance (0.246, p = 0.006). Consequently, the statistical evidence justifies the acceptance of all five of these direct relationship hypotheses.

In terms of interaction effects, the dataset yields mixed results for the moderating role of Trust. The interaction term "Trust x Motivation" significantly and negatively influences Employee Performance (0.119, p = 0.010), which leads to the acceptance of this hypothesis and indicates that Trust buffers or dampens the impact of Motivation on performance. However, the same interaction term fails to achieve statistical significance when predicting Knowledge Sharing (0.089, p = 0.054). Because this p-value exceeds the 0.05 threshold and the 95% confidence interval spans across zero (-0.002 to 0.176), researchers must reject this final hypothesis, concluding that Trust does not moderate the relationship between Motivation and Knowledge Sharing. Trust exerts the strongest impact on Knowledge Sharing (f2 = 0.309, Medium effect). This reveals that building trust in the workplace acts as the most critical factor for encouraging employees to share knowledge. The Trust x Motivation interaction contributes very little. It

Table 4. Conditional Direct Effect

	β	Mean	SD	T statistics	P values
Motivation -> Employee Performance Trust at +1 SD	0.170	0.169	0.099	1.710	0.044
Motivation -> Knowledge Sharing Trust at +1 SD	0.429	0.432	0.079	5.428	0.000
Motivation -> Employee Performance Trust at -1 SD	0.407	0.399	0.126	3.236	0.001
Motivation -> Knowledge Sharing Trust at -1 SD	0.252	0.256	0.096	2.631	0.004
Motivation -> Employee Performance Trust at Mean	0.289	0.284	0.101	2.853	0.002
Motivation -> Knowledge Sharing Trust at Mean	0.341	0.344	0.068	4.993	0.000

introduces a small effect on Employee Performance (f2 = 0.032) and fails to create any meaningful effect on Knowledge Sharing (f2 = 0.018).

The specific indirect effect analysis reveals how knowledge sharing bridges the relationships between the independent variables and employee performance. Motivation successfully channels its positive influence through knowledge sharing to enhance employee performance (β = 0.126, t = 2.946, p = 0.002). Similarly, trust exerts an even stronger, highly significant indirect impact on employee performance by driving knowledge sharing behaviors (β = 0.171, t = 3.530, p = 0.000). In contrast, the interaction between trust and motivation fails to produce a significant indirect effect on employee performance through knowledge sharing (β = 0.033, t = 1.456, p = 0.073). These findings demonstrate that while individual drives like motivation and trust independently utilize knowledge sharing to boost workplace performance, their joint interaction does not significantly alter performance through this collaborative pathway.

The empirical findings from this study reinforce and extend established literature regarding the structural relationships among trust, motivation, knowledge sharing, and employee performance. Specifically, the strong medium effect of trust on knowledge sharing aligns closely with the insights of Liang and Yin (2024), who demonstrate that high levels of employee trust significantly unlock and accelerate team-based knowledge sharing behaviors. When a workplace culture fosters deep organizational trust, employees feel psychologically safe enough to exchange information and collaborate without fear of exploitation. Furthermore, Le and Nguyen (2023) emphasize that employee trust in leadership acts as a foundational element that stimulates proactive knowledge-sharing behaviors across teams. This collaborative exchange directly feeds into the broader performance ecosystem, corroborating the work of Lee et al. (2020), who highlight how trust and knowledge sharing serve as powerful, interconnected mediating roles that successfully translate baseline employee drivers—such as motivation or organizational incentives—into superior employee performance.



Figure 2. Conditional Direct Effect

Integrating the insights of Ng (2023), Hejazi and Khamees (2022), and Lee et al. (2022) further enriches the narrative of how trust and motivation collectively catalyze knowledge sharing and employee performance. The powerful effect of

trust on knowledge sharing strongly mirrors the conclusions of Ng (2023), who validates that institutional trust significantly increases an employee's natural knowledge-sharing tendency within an organization. When employees trust their peers and the organizational system, they voluntarily dismantle information silos. Moreover, this study's findings regarding the motivational path toward knowledge sharing align with the systematic review by Hejazi and Khamees (2022), which identifies key motivational factors as the primary engines that drive employees to participate in open knowledge exchange. Rather than keeping insights to themselves, motivated workers actively look for opportunities to share their expertise when they operate in a supportive environment.

This interconnected dynamic ultimately elevates individual outputs, directly corroborating the work of Lee et al. (2022), who demonstrate that organizational trust plays a pivotal, direct role in maximizing overall job performance. When we look at these relationships through a unified lens, trust operates as both a critical prerequisite and a performance accelerator. High trust ensures that individual motivational factors successfully convert into widespread knowledge sharing (Hejazi & Khamees, 2022; Ng, 2023), which then directly translates into optimal job performance (Lee et al., 2022). Conversely, as the bottleneck analysis warns, an absence of trust effectively stalls this transmission chain, preventing employee motivation from materializing into productive, collective performance.

Under average trust conditions (Mean) at table 4 show motivation significantly improves employee performance (β= 0.289, p = 0.002) and effectively drives knowledge sharing behaviors (β = 0.341, p = 0.000). However, these dynamics shift dramatically as trust levels within the organization fluctuate. When employees experience low trust (-1 SD), motivation exerts its strongest positive impact on employee performance (β = 0.407, p = 0.001). This phenomenon indicates that in a low-trust environment, personal motivation functions as a critical compensatory mechanism, allowing employees to maintain their high performance. Conversely, a high-trust environment (+1 SD) reduces the direct reliance of performance on motivation to its lowest level, though the relationship remains statistically significant (β = 0.170, p = 0.044).

Tabel 5. Conditional Indirect Effect

	β	Mean	SD	T statistics	P values
Motivation -> K Sharing -> Employee Performance Trust at +1 SD	0.159	0.163	0.051	3.088	0.001
Motivation -> K Sharing -> Employee Performance Trust at -1 SD	0.093	0.097	0.045	2.067	0.019
Motivation -> K Sharing -> Employee Performance Trust at Mean	0.126	0.130	0.043	2.946	0.002

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In contrast, the relationship between motivation and knowledge sharing exhibits the opposite interaction pattern. When trust levels drop (-1 SD), the positive impact of motivation on an employee's willingness to share knowledge weakens significantly (β = 0.252, p = 0.004). This suggests that motivation alone cannot compel employees to share their expertise if they lack a fundamental sense of safety and trust. On the other hand, a high-trust environment (+1 SD) acts as a powerful accelerator. High trust successfully unlocks the full potential of motivation, triggering the strongest positive impact on knowledge sharing activities among employees (β = 0.429, p = 0.000). In the fast-paced retail sector, direct intrinsic psychological drives and daily teamwork habits primarily propel knowledge-sharing behavior. Organizational trust functions as a baseline prerequisite for psychological safety rather than an interactive amplifier. Therefore, once this baseline safety exists, an individual's level of motivation directly translates into knowledge-sharing behavior without requiring a simultaneous joint interaction between trust and motivation.

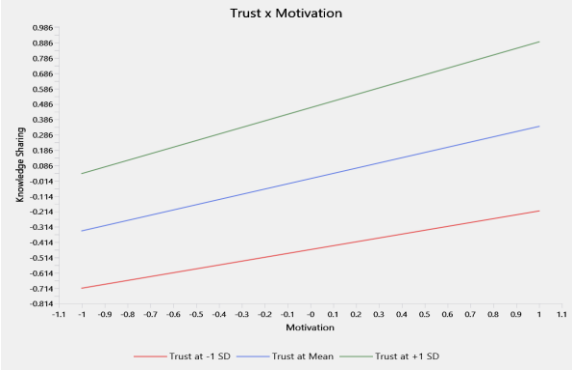


Figure 3. Conditional Indirect Effect

Under average trust conditions (Mean) at figure 2 and table 5, the indirect path from motivation to employee performance through knowledge sharing yields a significant positive effect (β = 0.126, p = 0.002). This baseline result demonstrates that knowledge sharing successfully transmits the benefits of employee motivation into actual job performance in a typical workplace climate. However, changing organizational trust levels alters the strength of this mediated relationship. When employees operate in a low-trust environment (-1 SD), the indirect effect of motivation on performance drops to its weakest, though still significant, level (β = 0.093, p = 0.019). This drop indicates that a lack of trust creates a friction point, restricting the flow of motivation through knowledge sharing into performance outcomes.

Conversely, a high-trust environment (+1 SD) as shows at figure 3 substantially amplifies this indirect pathway, driving the effect to its highest level (β = 0.159, p = 0.001). High trust successfully unlocks the collaborative process, allowing motivated employees to share knowledge much more freely and effectively, which ultimately maximizes their overall performance.

Comparing these conditions reveals that organizational trust acts as a vital catalyst for the entire mediation chain. As trust rises from low to high levels, it progressively strengthens the

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Table 6. PLS Predict, CVPAT, R2 and SRMR Result

PLS Predict	PLS Predict R^2	Q^2predict	RMSE	MAE
Knowledge Sharing	0.557	0.531	0.607	0.485
Employee Performance	0.557	0.482	0.692	0.533

CVPAT	CVPAT Summary PLS loss	IA loss	Average loss difference	t value	p value
Knowledge Sharing	0.588	1.014	-0.426	4.597	0.000
Employee Performance	0.557	1.015	-0.458	4.897	0.000
Overall	0.576	1.014	-0.439	5.510	0.000
SRMR					0.077

mechanism through which motivation fuels knowledge sharing, which then translates into superior employee performance.

The table 6 model fit analysis confirms strong predictive power and an acceptable overall model fit. The R2 values demonstrate that the model explains a substantial 55.7% of the variance for both Knowledge Sharing and Employee Performance. Furthermore, PLS-Predict yields positive Q2predict values for Knowledge Sharing (0.531) and Employee Performance (0.482), proving that the model achieves high out-of-sample predictive relevance with relatively low prediction errors (RMSE and MAE).

The Cross-Validated Predictive Ability Test (CVPAT) summary further validates these metrics, as the PLS loss significantly outperforms the Indicator Average (IA) loss across Knowledge Sharing ($p = 0.000$), Employee Performance ($p = 0.000$), and the overall model ($p = 0.000$). Finally, the Standardized Root Mean Square Residual (SRMR) value of 0.077 sits comfortably below the recommended 0.08 threshold, confirming that the structural model successfully fits the empirical data.

Tabel 7. IPMA

	Performance
Employee Performance	73.759
Knowledge Sharing	57.033
Motivation	65.601
Trust	62.632

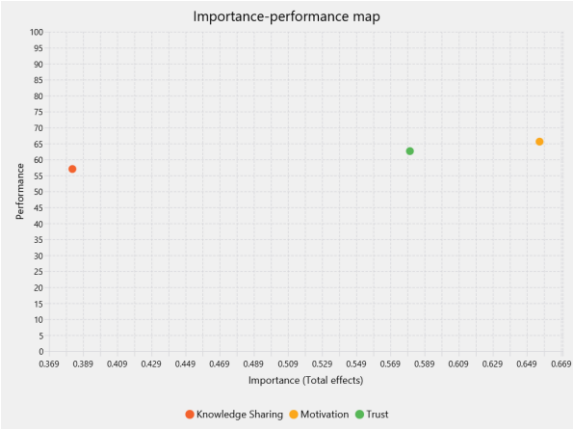


Figure 4. IPMA Result

The Importance-Performance Map Analysis (IPMA) benchmarks the performance scores of the model's constructs on a scale from 0 to 100. Employee Performance achieves the highest overall execution score at 73.759, demonstrating strong actual outcomes within the organization. Among the driving factors, Motivation registers a solid performance score of 65.601, followed closely by Trust at 62.632. In contrast, Knowledge Sharing captures the lowest performance score at 57.033. This lower rating positions Knowledge

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Sharing as the primary area for strategic improvement, suggesting that management should prioritize resources here to optimize its latent potential and ultimately boost overall employee performance.

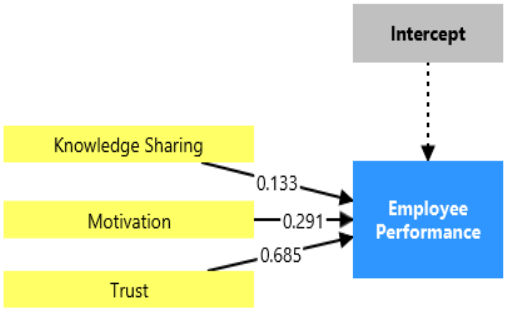


Figure 5. Necessary Condition Analysis Result

The Necessary Condition Analysis (NCA) reveals how different antecedent constructs function as essential prerequisites for the outcome variable. Trust establishes a strong necessity condition, yielding a substantial ceiling effect size (CE-FDH = 0.685, CR-FDH = 0.355, p = 0.013), which marks it as an indispensable bottleneck factor that organizations must guarantee to achieve high performance.

Table 8. Necessary Condition Analysis Result

	Ceiling effect size	95%	CE-FDH	CR-FDH	Permutation p value	Condition
KSharing	0.133	0.109	0.133	0.084	0.000	Moderate Necessity
Motivation	0.291	0.222	0.291	0.235	0.001	Moderate Necessity
Trust	0.685	0.679	0.685	0.355	0.013	Strong Necessity

Motivation and Knowledge Sharing both demonstrate moderate necessity conditions, though Motivation exhibits a larger ceiling effect size (CE-FDH = 0.291, CR-FDH = 0.235, p = 0.001) compared to Knowledge Sharing (CE-FDH = 0.133, CR-FDH = 0.084, p = 0.000). Together, these statistically significant permutation p-values confirm that a deficit in any of these three conditions will critically limit or bottleneck the maximum attainable level of the outcome.

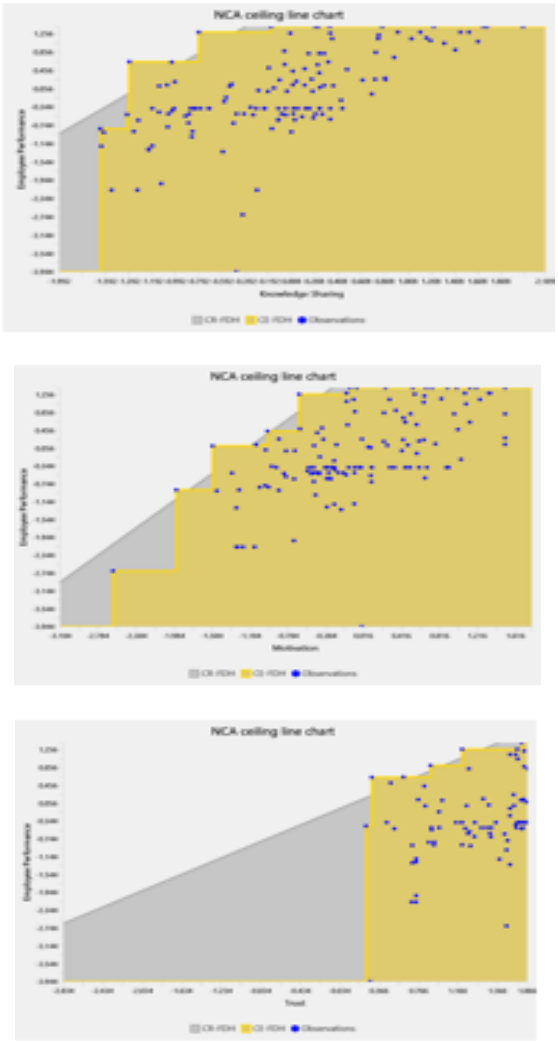


Figure 6. NCA Ceiling Chart

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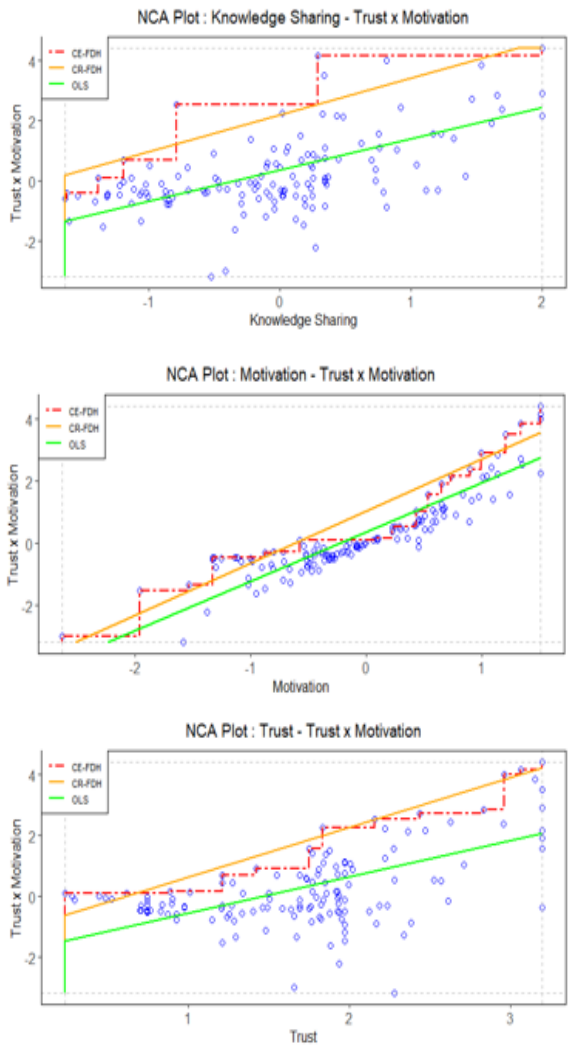


Figure 7. NCA Plot

Table 9. Bottleneck Value

Bottleneck CE-FDH				
	Emp.Perfor	**KSharing**	**Motivation**	**Trust**
0%	-3.944	-1.636	-2.625	0.233
10%	-3.409	-1.636	-2.625	0.233
20%	-2.874	-1.636	-2.625	0.233
30%	-2.340	-1.636	-1.958	0.233
40%	-1.805	-1.636	-1.958	0.233
50%	-1.270	-1.636	-1.958	0.233
60%	-0.735	-1.406	-1.576	0.233
70%	-0.201	-1.387	-1.576	0.292
80%	0.334	-1.387	-0.997	0.292
90%	0.869	-0.791	-0.663	0.886
100%	1.404	-0.169	-0.128	1.809
Bottleneck CE-FDH				
0%	-3.944	NN	NN	NN
10%	-3.409	NN	NN	NN
20%	-2.874	NN	-3.131	NN
30%	-2.340	NN	-2.779	-2.498
40%	-1.805	NN	-2.427	-1.916
50%	-1.270	NN	-2.075	-1.335
60%	-0.735	-1.856	-1.723	-0.753
70%	-0.201	-1.489	-1.371	-0.172
80%	0.334	-1.122	-1.019	0.410
90%	0.869	-0.755	-0.667	0.991
100%	1.404	-0.389	-0.315	1.573

The bottleneck table 9 and 10 identifies the minimum levels required for each antecedent variable to achieve specific target levels of Employee Performance. To reach lower-to-moderate levels of Employee Performance (0% to 50%), organizations only require minimum thresholds from Motivation (starting at 20%) and Trust (starting at 30%), while Knowledge Sharing remains non-necessary (NN). However, high levels of Employee Performance demand a much stricter presence of all three conditions. For instance, achieving a 70% level of Employee Performance requires Knowledge Sharing at -1.489, Motivation at -1.371, and Trust at -0.172. As Employee Performance reaches its peak at 100%, the requirements escalate dramatically, positioning Trust as the most critical bottleneck at 1.573, followed by Knowledge Sharing at -0.389 and Motivation at -0.315.

Table 10. Bottleneck Percentage Result

Bottleneck CE-FDH			
Emp.Perfor	**KSharing**	**Motivation**	**Trust**
0%	NN	NN	NN
10%	NN	16.1	NN
20%	NN	16.1	NN
30%	NN	31.5	NN
40%	6.9	49.6	NN
50%	12.3	74.1	32.9
60%	23.3	76.5	51.2
70%	23.3	81.3	53.9
80%	52.9	87.6	92.1
90%	52.9	95.9	92.1
100%	100.0	100.0	100.0
Bottleneck CE-FDH			
0%	NN	2.7	NN
10%	NN	13.7	NN
20%	NN	24.6	NN
30%	NN	35.6	NN
40%	NN	46.5	9.8
50%	9.5	57.5	25.5
60%	26.6	68.4	41.1

70%	43.7	79.4	56.8
80%	60.7	90.3	72.4
90%	77.8	NA	88.0
100%	94.9	NA	NA

Traditional management focuses on maximizing everything at once—more motivation, more trust, more teamwork. These results dictate a more efficient, sequential roadmap. Managers must treat these variables as strict prerequisites rather than interchangeable factors. Management should focus resources exclusively on baseline morale and psychological safety. Cultivating motivation past 20% and trust past 30% keeps the team afloat. At this level, forcing intensive knowledge-sharing platforms or mandatory collaboration meetings yields zero return on investment, as the data deems it non-necessary (NN). When pushing for peak excellence, adding more motivation will fail if a trust deficit exists. Because Trust represents the absolute highest bottleneck (1.573), executives must prioritize high-level transparency, psychological safety, and leadership integrity above all else. Once they secure trust, they must immediately clear the secondary bottleneck by building open infrastructure for Knowledge Sharing.

The NCA result introduces a critical theoretical nuance: non-linearity and necessity. The moderated mediation model explains how trust works through motivation, but the NCA proves when these variables become absolute gatekeepers. It proves that at a certain threshold (70%), the relationship transforms from a casual influence into a strict constraint. Previously, literature might have treated Knowledge Sharing as a general positive driver of performance. Knowledge Sharing acts not as a basic driver, but as an elite accelerator. It plays no role in basic survival (0%-50%), but becomes mandatory for complex, peak organizational output.

CONCLUSION

This study provides critical insights into the structural and necessary conditions that drive workforce productivity in the retail sector. The empirical findings confirm that trust acts as the ultimate catalyst and foundational bottleneck within the organization, directly accelerating employee motivation and knowledge-sharing behaviors to maximize overall employee performance. While both Importance-Performance Map Analysis (IPMA) and Necessary Condition Analysis (NCA) position Employee Performance at a high execution level, they expose Knowledge Sharing as the weakest operational link and a critical threshold requirement for peak productivity. Theoretically, these results advance organizational behavior literature by shifting the narrative from linear mediation to a non-linear threshold perspective, demonstrating that a deficit in trust or motivation creates an absolute barrier that standard incentives cannot overcome. Practically, retail managers must shift focus away from isolated motivational programs and instead aggressively invest in building transparent, high-trust

environments, while simultaneously establishing structured platforms that turn individual motivation into collective knowledge sharing.

Despite these contributions, the research contains certain limitations that open valuable avenues for future inquiry. The cross-sectional design of this study captures organizational dynamics at a single point in time, which limits the ability to observe how trust and knowledge-sharing habits evolve over longer operational cycles. Additionally, because this study focuses specifically on the fast-paced retail industry, the generalizability of these threshold values to other corporate environments remains restricted. Future research should deploy longitudinal designs to track the long-term stability of these performance bottlenecks across different business quarters. Finally, subsequent studies should introduce digital collaboration tools or leadership styles as potential moderators within the framework to explore how emerging technologies alter the minimum necessary thresholds of physical workplace trust.

CONFLICTS OF INTEREST

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

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Appendix

Table 1. Validity and Reliability Test

	Knowledge Sharing		Organizational Culture		Transformational Leadership		Employee Performance	
	Correlation	Cronbach's Alpha	Correlation	Cronbach's Alpha	Correlation	Cronbach's Alpha	Correlation	Cronbach's Alpha
Itm1	0,479		0,394		0,610		0,637	
Itm2	0,352		0,433		0,538		0,462	
Itm3	0,373		0,409		0,619		0,583	
Itm4	0,591		0,587		0,550		0,497	
Itm5	0,459		0,490		0,608		0,511	
Itm6	0,411		0,624		0,745		0,499	
Itm7	0,562		0,394		0,629		0,547	
Itm8	0,513	0,842	0,482	0,852	0,747	0,927	0,614	0,887
Itm9	0,552		0,530		0,782		0,458	
Itm10	0,371		0,427		0,650		0,622	
Itm11	0,551		0,340		0,651		0,616	
Itm12	0,413		0,584		0,668		0,649	
Itm13	0,556		0,591		0,621		0,637	
Itm14	0,416		0,392		0,611		0,414	
Itm15	0,410		0,596		0,744		0,448	