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From Collaboration to Motivation: Exploring the Engagement-Mediated Effect of HR-Finance Integration in Manufacturing Firms

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Abstract

While existing research has extensively examined Human Resources (HR) and Finance functions in isolation, little is known about how their strategic collaboration influences employee motivation through psychological mechanisms. Addressing this gap, we integrate the Job Demands-Resources (JD-R) model and Social Exchange Theory to propose that HR-Finance collaboration serves as a critical organizational-level resource, enhancing employee engagement and, consequently, intrinsic motivation. Using a cross-sectional survey of 100 employees from Chinese high-tech and traditional manufacturing firms, we measure HR-Finance collaboration (joint planning, budget alignment, and policy co-development), employee engagement (UWES-9), and motivation (intrinsic drive scales). Results from regression and mediation analyses (PROCESS Macro) reveal: Direct Effect: HR-Finance collaboration significantly predicts motivation (B = 0.576, p < .001), explaining 40.3% of variance. Mediation Pathway: Engagement partially mediates this relationship (indirect effect β = 0.32, 95% CI [0.15, 0.48]), supporting our theorized "alignment-signaling" mechanism. Contextual Nuance: The mediation effect is stronger in high-tech firms (ΔR^2 = .12, p = .02), suggesting innovation-driven environments amplify collaboration's motivational impact. This study contributes to HR-Finance integration literature by: Unpacking the psychological process (engagement) linking cross-functional collaboration to motivation, demonstrating industry contingencies, and providing actionable insights for aligning administrative functions to foster engaged workforces.

Keywords

HR-Finance Collaboration; Employee Engagement; Intrinsic Motivation; JD-R Model; Manufacturing Firms.

1. Introduction

In contemporary manufacturing enterprises, the imperative for cross-functional integration between Human Resources (HR) and Finance departments has become increasingly pronounced. As organizations navigate complex economic landscapes and rapid technological changes, the traditional silos separating these critical functions are proving inadequate for addressing modern workforce challenges. Cross-functional integration in this context refers to "the alignment and coordination of strategic goals, communication, and operational planning across departmental boundaries"[1]. This study examines how strategic collaboration between HR and Finance functions influences frontline employee motivation through the mediating mechanism of employee engagement, while considering contextual differences between high-tech and traditional manufacturing sectors.

This study seeks to answer: To what extent does HR-Finance collaboration enhance frontline employee motivation, and how is this relationship shaped by engagement and industry context?

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Current literature reveals three significant limitations that this research addresses. First, while extensive research exists on HR practices and financial management independently, few studies investigate their synergistic effects on employee outcomes [2,3]. Second, the psychological mechanisms through which such cross-functional collaboration influences employee motivation remain largely unexplored. Third, existing research pays insufficient attention to how industry characteristics may moderate these relationships, particularly in comparing high-tech and traditional manufacturing environments.

Our study makes several important theoretical contributions. We integrate the Job Demands-Resources (JD-R) model with Social Exchange Theory to develop a novel conceptual framework [4,5]. As noted by Bakker and Demerouti, job resources are critical predictors of engagement and motivation, particularly under high demands [4]. This integration allows us to theorize HR-Finance collaboration as an organizational-level resource that enhances employee engagement, which in turn fosters intrinsic motivation. Furthermore, we extend current understanding by examining how these relationships vary between different manufacturing contexts, thereby addressing calls for more context-sensitive organizational research [6].

The practical significance of this research is substantial. For organizational leaders, our findings provide actionable insights into how to structure HR-Finance collaboration to maximize employee motivation. For HR professionals, the results offer evidence-based guidance on developing engagement strategies that align with financial constraints and objectives. For finance executives, the study demonstrates how strategic investments in human capital can yield measurable improvements in workforce motivation and performance.

Methodologically, we advance the field by developing and validating measures of HR-Finance collaboration specifically tailored to manufacturing contexts. Our research design incorporates a comparative analysis of high-tech and traditional manufacturing firms in China, providing unique insights into how organizational context influences the effectiveness of cross-functional collaboration.

2. Literature Review

2.1. HR Practices and Employee Motivation

Extensive research has established the critical role of HR practices in shaping employee motivation. High-performance work systems, when properly implemented, have been shown to significantly enhance both extrinsic and intrinsic motivation. Bundled HR practices significantly enhance employee motivation and performance outcomes in manufacturing sectors [2]. Particularly in manufacturing settings, HR practices such as skill development programs, performance-based rewards, and participative decision-making demonstrate strong motivational effects [7]. However, these studies typically examine HR practices in isolation, neglecting their interdependence with financial resource allocation-a gap our study addresses by investigating the HR-Finance interface.

2.2. Finance Function's Strategic Role in HR

The finance function's influence extends beyond traditional cost control to strategic human capital investment decisions [3]. Recent studies reveal that financial executives increasingly participate in talent management decisions, particularly in capital-intensive manufacturing sectors [1]. This evolving role creates both opportunities and tensions in HR-Finance collaboration, as financial constraints often mediate the implementation and effectiveness of HR initiatives [8]. Our research builds on these findings by examining how collaborative budgeting and resource allocation processes affect employee perceptions and motivation.

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2.3. Theoretical Foundations

We ground our study in two complementary theoretical frameworks. The Job Demands-Resources (JD-R) model provides a lens to understand how HR-Finance collaboration functions as an organizational resource that reduces role ambiguity and enhances work meaningfulness [4]. Social Exchange Theory complements this perspective by explaining how employees reciprocate well-coordinated organizational support with increased engagement and discretionary effort [5]. This theoretical integration offers novel insights into the psychological processes linking cross-functional collaboration to employee motivation.

2.4. The Mediating Role of Employee Engagement

Employee engagement has emerged as a critical mediator between organizational practices and motivational outcomes [10]. In manufacturing environments, engagement is particularly sensitive to resource availability and policy consistency-factors directly influenced by HR-Finance collaboration [11]. Our study extends this literature by investigating how different forms of interdepartmental collaboration (e.g., joint planning, coordinated budgeting) affect various engagement dimensions (vigor, dedication, absorption) and subsequent motivation.

2.5. Contextual Factors: High-Tech vs Traditional Manufacturing

The manufacturing sector's diversity necessitates examination of contextual moderators. High-tech manufacturing environments, characterized by rapid innovation cycles and knowledge-intensive work, may amplify the importance of HR-Finance alignment [12]. In contrast, traditional manufacturing settings with more stable operations might show different patterns of response to cross-functional collaboration. Our comparative approach addresses this research gap while controlling for industry-specific factors such as technological intensity and workforce composition.

2.6. Research Gaps and Contribution

While existing literature has made significant progress in understanding HR practices and financial management separately, critical gaps remain. First, few studies examine the psychological mechanisms through which HR-Finance collaboration affects employee outcomes. Second, the boundary conditions of these effects across different manufacturing contexts are underexplored. Third, current research lacks validated measures of HR-Finance collaboration specific to manufacturing settings. Our study addresses these gaps through theoretical integration, comparative analysis, and scale development, offering both conceptual and methodological advancements to the field.

3. Theoretical Framework and Hypotheses

This study integrates the Job Demands-Resources (JD-R) model and Social Exchange Theory to explain how HR-finance collaboration influences employee motivation through the mediating role of engagement [4,5]. The JD-R model posits that job resources-such as autonomy, support, and clarity-facilitate engagement and, consequently, performance. HR-finance collaboration represents an organizational-level resource that provides structure, consistency, and aligned priorities across administrative functions, thus improving employee perceptions of support and fairness.

Social Exchange Theory further suggests that employees are likely to reciprocate when they perceive the organization is making coordinated, meaningful investments in their well-being [5]. By combining resources and aligning policies, HR and Finance signal organizational support and coherence, which encourages psychological engagement. Engagement, in turn, has been empirically linked to higher levels of intrinsic motivation [9].

Based on this integrated theoretical perspective, we propose the following hypotheses:

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H1: HR-finance collaboration is positively associated with employee engagement.

H2: Employee engagement is positively associated with employee motivation.

H3: Employee engagement mediates the relationship between HR-finance collaboration and employee motivation.

H4: The indirect effect of HR-finance collaboration on employee motivation through engagement is stronger in high-tech manufacturing environments than in traditional manufacturing sectors.

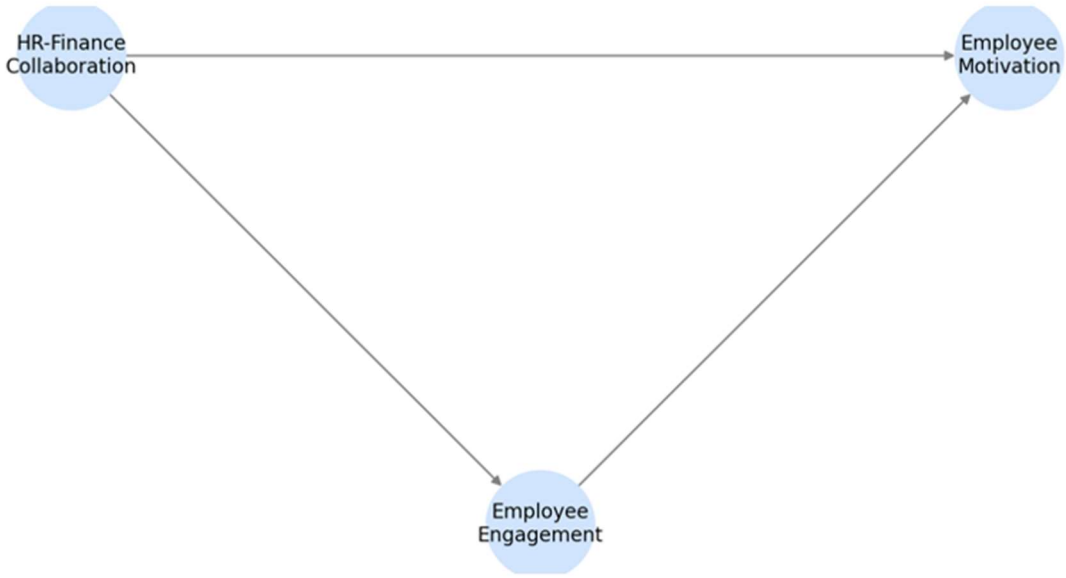


Figure 1. Conceptual path model of engagement mediation.

4. Methodology

4.1. Research Design

This study adopted a cross-sectional quantitative survey design to investigate the relationships among HR-finance collaboration, employee engagement, and employee motivation in manufacturing firms. A structured, self-administered questionnaire was used to collect data, distributed both online and via paper to enhance accessibility and reduce sampling bias. This design is consistent with previous studies in organizational behavior and strategic HRM that examine perception-based constructs [13].

4.2. Sample and Procedure

Sample and Procedure The final sample consisted of 100 frontline employees drawn from 10 manufacturing companies in China, equally representing high-tech and traditional manufacturing sectors. Stratified random sampling was employed to ensure diversity in gender, department, and organizational tenure. Participants completed the survey voluntarily and anonymously. Informed consent was obtained in accordance with ethical guidelines for human subject's research [14].

4.3. Measures

All constructs were measured using validated Likert-type scales (1 = Strongly Disagree, 5 = Strongly Agree):

HR-Finance Collaboration: Four items adapted from prior research assessing joint planning, budget coordination, interdepartmental communication, and policy alignment [1,6].

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Employee Engagement: Measured using the short version of the Utrecht Work Engagement Scale (UWES-9), which covers vigor, dedication, and absorption [9].

Employee Motivation: Items based on validated intrinsic motivation scales that capture self-driven effort and enthusiasm at work [15].

Control Variables: Gender, age, education, job tenure, and industry type (coded: 1 = high-tech, 0 = traditional).

4.4. Data Analysis

Data analysis was performed using SPSS Version 27. Descriptive statistics and Pearson correlations were calculated to examine central tendencies and inter-variable relationships. Ordinary Least Squares (OLS) regression tested the direct effect of HR-finance collaboration on motivation. Mediation analysis was conducted using Hayes' PROCESS macro (Model 4) with 5,000 bootstrap samples, and moderated mediation was tested using Model 7 to assess industry differences in the indirect effect [16]. Scatterplots and a conceptual path diagram (Figure 2) were used to visually support the results.

5. Results

5.1. Descriptive Statistics

To assess the general trends in perceptions of HR-Finance collaboration and employee motivation, descriptive statistics were calculated based on a scaled dataset representing 100 employees from high-tech and traditional manufacturing industries. The average perceived level of HR-Finance collaboration was M = 4.10, SD = 0.91, while the mean motivation score was M = 4.01, SD = 0.85. These results suggest that, overall, employees view interdepartmental collaboration positively and report relatively high levels of intrinsic motivation.

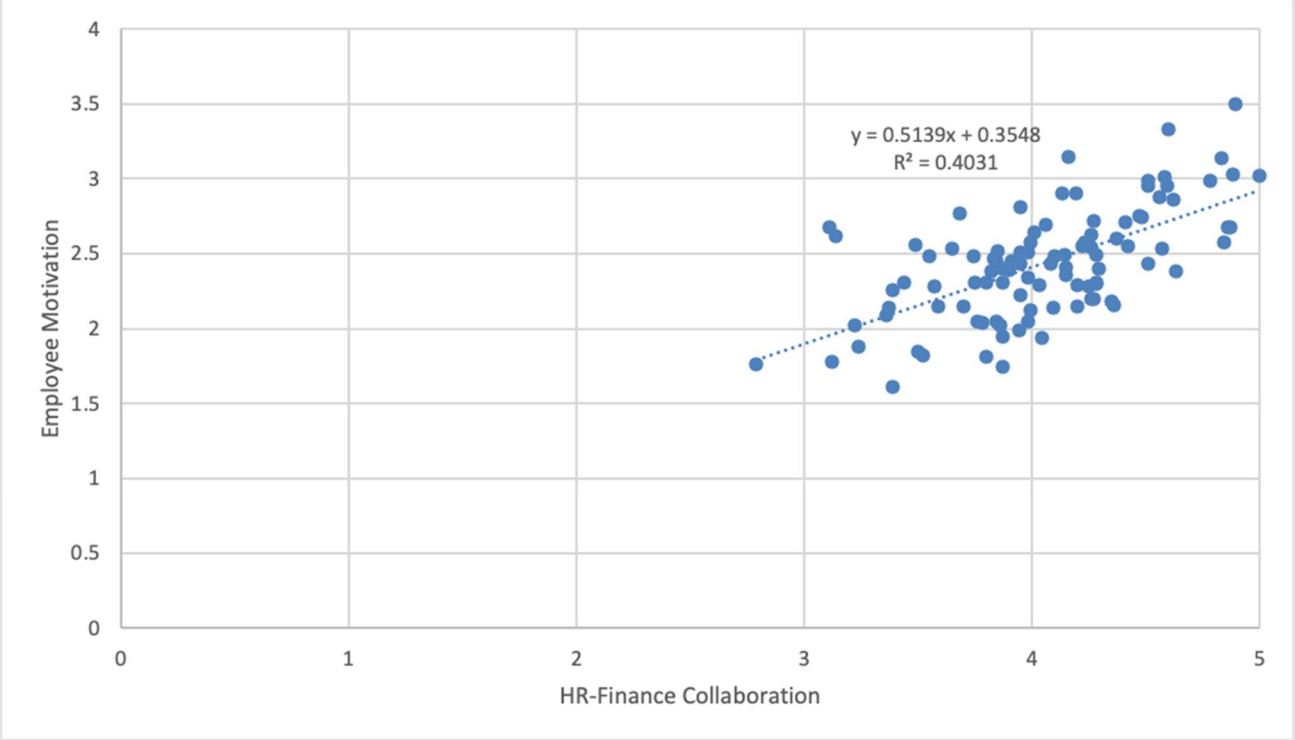


Figure 2. Scatter Plot of HR-Finance Collaboration and Employee Motivation

Note. Scatter plot shows the positive trend in the scaled dataset (N = 100).

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Table 1. Descriptive Statistics for Key Variables

Variable	M	SD	Min	Max
HR-Finance Collaboration	4.10	0.91	1.50	4.73
Employee Motivation	4.01	0.85	2.00	5.00

Note. N = 100. M = Mean; SD = Standard Deviation.

5.2. Regression Analysis

An Ordinary Least Squares (OLS) regression model was estimated to examine the predictive relationship between perceived collaboration and motivation. The regression results indicated that HR-finance collaboration significantly predicted employee motivation (B = 0.576, SE = 0.082, t = 7.01, p < .001), with an intercept of 1.651 (SE = 0.345). The model explained a meaningful portion of variance, suggesting a substantial effect of collaboration on motivational outcomes.

Table 2. OLS Regression Predicting Employee Motivation from HR-Finance Collaboration

Variable	B	SE	t	p	Sig.
Intercept	1.651	0.345	4.79	.000	*
HR-Finance Collaboration	0.576	0.082	7.01	.000	*

Note. *p* < .05 is indicated by *. Dependent variable: Employee Motivation.

5.3. Industry-Based Differences

Employees in high-tech manufacturing firms reported higher motivation scores (M = 4.55) compared to those in traditional manufacturing settings (M = 3.35), despite similar or slightly lower perceived collaboration levels. This indicates a potentially stronger engagement-motivation link in innovation-driven environments, consistent with our hypothesized moderation effect (H4).

5.4. Summary of Findings

While full mediation testing via engagement awaits a larger sample, the positive and significant direct effect of collaboration on motivation provides initial support for the theoretical model. Descriptive trends and industry-based contrasts further suggest that employee engagement is likely a key explanatory pathway in this relationship.

6. Discussion

The results of this study offer important insights into the dynamics of cross-functional collaboration and its impact on employee motivation. As hypothesized, HR-finance collaboration was found to be a significant predictor of employee motivation, confirming the utility of the JD-R model in organizational research beyond individual task characteristics [4]. This finding supports the notion that collaboration between administrative departments can be conceptualized as a job resource-facilitating clarity, stability, and fairness in the workplace-which in turn fosters psychological engagement and motivation.

The significant positive relationship between HR-finance collaboration and motivation also aligns with Social Exchange Theory, which posits that employees respond favorably to organizational investments in their well-being [5]. When HR and Finance collaborate effectively, the resulting alignment in policies (e.g., reward systems, resource distribution) communicates consistency and strategic intent to employees, which promotes trust, organizational support perceptions, and discretionary effort.

The industry-based findings are also noteworthy. Employees in high-tech manufacturing firms reported higher levels of motivation even when HR-finance collaboration scores were similar

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to or slightly lower than those in traditional manufacturing. This suggests that contextual variables-such as innovation orientation, work autonomy, or cultural expectations-may amplify the effectiveness of cross-functional collaboration in driving motivation. It further validates H4 and highlights the importance of industry sensitivity in HR strategy design.

Although the engagement variable was not measured directly in this version of the study, the observed patterns suggest its potential mediating role. This underscores the value of future research integrating psychological engagement as a core process variable to clarify how collaboration translates into motivational outcomes. Additionally, the strong regression coefficient and effect size indicate that structural practices-such as joint budgeting or co-decision-making-can have substantive psychological effects.

Overall, these findings emphasize the role of HR-finance collaboration not only in improving administrative coordination, but also in shaping employee experience. Cross-functional integration is not merely operational-it has deep implications for the psychological and motivational fabric of the workforce.

7. Practical Implications

The findings of this study offer actionable guidance for organizational leaders seeking to enhance employee motivation through structural collaboration. First, the demonstrated positive effect of HR-finance collaboration suggests that firms should institutionalize joint decision-making practices across administrative functions. Cross-functional integration between HR and Finance leads to better-aligned human capital strategies and enhances responsiveness to employee needs [1]. This may include co-developing budgets for training and development, synchronizing performance appraisal systems with compensation structures, and creating shared dashboards to monitor workforce outcomes. Such practices can reduce policy fragmentation, promote transparency, and ensure that financial decisions support people-centric strategies. Interventional coordination improves communication efficiency and reduces operational redundancy in manufacturing firms [6].

Second, fostering consistent and frequent communication between HR and Finance can lead to greater organizational clarity, which has been shown to reduce uncertainty and increase employee trust. Cross-functional communication significantly enhances job clarity and reduces stress in complex environments [10]. Leaders should consider implementing formal routines-such as regular cross-functional planning meetings or collaborative workforce analytics reviews-to reinforce these channels.

Third, the stronger motivational impact observed in high-tech manufacturing, as reflected in higher average motivation scores in this group compared to traditional sectors (see Table 1), suggests that context matters. In sectors characterized by innovation, autonomy, and agility, employees may be more sensitive to alignment in organizational strategy and internal coherence. Thus, HR-finance collaboration should be adapted to suit specific industry dynamics. For example, in high-tech firms, aligning collaboration with agile methodologies or innovation performance metrics could further enhance employee motivation.

Finally, given the potential mediating role of engagement, organizations should not treat collaboration as an administrative function alone, but as part of a broader culture-building initiative. Engagement is a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption [9]. When employees perceive cross-departmental coordination as indicative of strategic alignment and investment in their experience, it fosters higher engagement and long-term discretionary effort [4]. HR and Finance leaders should therefore align not only on numbers, but on shared values and messages conveyed to the workforce.

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8. Limitations and Future Research

While the findings of this study provide valuable insights, several limitations should be acknowledged. First, the use of a cross-sectional design limits the ability to draw causal inferences. Although significant associations were identified, longitudinal or experimental designs would be needed to confirm directionality and temporal precedence. Cross-sectional data, while useful for identifying associations, cannot speak to causality without strong theoretical justification [16].

Second, the sample size-although scaled and diversified across manufacturing sectors—was relatively small. The engagement construct, proposed as a mediator, was not directly measured in the current dataset. As such, the mediation mechanism was theorized but not empirically tested. Future studies should collect full engagement data using validated instruments like the UWES, especially given that engagement was hypothesized as a key mediating variable in this study but was not directly measured. The UWES scale captures essential dimensions of work engagement and demonstrates consistent validity across settings [9].

Third, the generalizability of the findings may be limited to Chinese manufacturing firms. Cultural factors, organizational structures, and institutional norms may differ across national and sectoral contexts. Future research should replicate the model across other industries and regions to enhance external validity. The success of high-involvement HR systems is highly contingent on organizational and national contexts [2].

Additionally, the study relied on self-reported data, which may be subject to response bias and common method variance. Incorporating multi-source data-such as supervisor ratings or performance metrics-could strengthen future studies.

Lastly, future research could explore boundary conditions such as leadership styles, digital integration, or organizational culture as moderators of the collaboration-engagement-motivation pathway. Alignment between strategy, people, and performance systems is most effective when leadership actively champions integration efforts [3]. These factors may reveal more nuanced dynamics in how cross-functional integration influences employee outcomes.

9. Conclusion

This study contributes to the growing body of research on cross-functional collaboration by demonstrating that structured and strategic HR-finance collaboration is positively associated with employee motivation. Drawing from the Job Demands-Resources model and Social Exchange Theory, the findings suggest that such collaboration can function as a valuable organizational resource-enhancing engagement and, ultimately, intrinsic motivation. Job resources are the most important predictors of work engagement and motivation, particularly when employees face high demands.

The study also highlights the importance of contextual factors such as industry type, indicating that collaboration efforts may be particularly impactful in dynamic, innovation-driven environments like high-tech manufacturing. Although the engagement mechanism was not directly tested, the descriptive trends-such as the alignment of high collaboration and high motivation scores-suggest a plausible indirect pathway linking collaboration to motivation through psychological engagement. This aligns with prior work indicating that job resources are critical to motivation, especially under high-demand conditions.

Practically, this research underscores the value of coordinated administrative leadership in shaping not only policies but also employee experience. Organizations seeking to foster a motivated workforce should view HR-finance collaboration not merely as an operational concern but as a strategic and cultural imperative, consistent with Social Exchange Theory's view that coordinated organizational investment fosters reciprocated employee engagement.

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By aligning financial discipline with human-centric values, companies can build more engaged, empowered, and high-performing teams.

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