

HR System in a Logistics Company: Coordination Between Employees, Managers, and Dispatchers

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Abstract: *The logistics sector operates within a dynamic, time-sensitive environment where effective human resource (HR) management directly determines operational continuity, service quality, and competitive positioning. Unlike industries with stable workforce deployments, logistics organizations must continuously reconcile fluctuating demand patterns, geographically distributed employees, regulatory compliance requirements, and the real-time coordination demands of fleet operations. Within this context, the HR system functions not merely as an administrative repository but as an active coordination infrastructure linking three foundational stakeholder groups: employees (drivers, warehouse staff, and field personnel), managers (supervisors, department heads, and operations coordinators), and dispatchers (logistics coordinators responsible for route assignment and fleet oversight). This study examines the structural and functional dimensions of HR systems within logistics companies, with a particular focus on the coordination mechanisms among these three role groups. Using a convergent parallel mixed-methods research design, this paper draws on survey data ($n = 200$) collected across three mid-to-large logistics firms operating in Indonesia, supplemented by semi-structured interviews ($n = 18$) with purposively selected participants from each role cluster. The survey instrument assessed five dimensions: HR system usability, coordination efficiency, communication clarity, conflict resolution speed, and overall satisfaction. Interview data were analyzed through reflexive thematic analysis to surface experiential patterns that quantitative measures could not capture. Results indicate that integrated digital HR platforms significantly reduce coordination latency, improve scheduling accuracy, and enhance inter-role communication transparency when system integration depth is high. Managers reported the highest satisfaction across all measured dimensions (overall mean: 4.1/5), while employees demonstrated the lowest scores, particularly on conflict resolution speed (3.2/5) and system adoption (3.1/5). Dispatchers, despite holding the highest operational system access, reported moderate satisfaction, with coordination efficiency (4.0/5) constrained by the persistent disconnect between HRMS attendance data and dispatch scheduling tools. Qualitative findings revealed six dominant themes: system fragmentation, communication gaps, training deficits, managerial advantage, integration benefits, and compliance anxiety. The study contributes a three-layer Multi-Stakeholder HR Coordination Framework - comprising an Information Layer, a Workflow Layer, and an Analytics Layer - and offers seven evidence-based recommendations for logistics firms pursuing HR digital transformation. These findings carry practical implications for HR professionals, technology vendors, and logistics executives responsible for aligning system capabilities with the operational demands of a complex, multi-role environment.*

Keywords: *human resource management; logistics coordination; dispatch systems; workforce management; organizational communication; digital HR transformation; mixed-methods research; HRMS integration*

Introduction

Human resource management (HRM) in the logistics industry presents a set of challenges that are structurally distinct from those encountered in manufacturing, retail, or professional service sectors. The convergence of time-critical deliveries, geographically dispersed workforces, stringent regulatory compliance requirements, and real-time operational demands creates a uniquely complex organizational environment. Within this context, the effectiveness of an HR system cannot be evaluated solely on the basis of its administrative capabilities. Rather, its value is determined principally by its capacity to enable seamless, accurate, and timely coordination among diverse stakeholder groups whose operational roles are deeply interdependent.

In a typical logistics company, three primary role clusters define the operational hierarchy and together constitute the backbone of day-to-day service delivery. Employees - encompassing drivers, warehouse operatives, last-mile delivery personnel, and field technicians - execute the ground-level tasks upon which organizational output directly depends. Managers, including supervisors, department heads, and operations coordinators, carry responsibility for workforce planning, performance management, administrative approval, and the translation of strategic priorities into actionable team objectives. Dispatchers function as logistical nerve centers: they assign routes, monitor fleet positions in real time, manage schedule adherence, respond to service disruptions, and serve as the primary communication link between the field and the operations center. The interplay among these three groups is continuous, interdependent, and consequential, making the HR system that mediates their interactions a critical determinant of organizational performance.

Despite growing organizational and financial investment in HR technology across the logistics sector, empirical research examining multi-role coordination within logistics-specific HR systems remains notably limited. The existing literature addresses HRM predominantly from a generalist organizational perspective, or focuses narrowly on operational technologies such as fleet management systems, transport management platforms, and route optimization tools, without adequately accounting for the human capital dimensions of logistics coordination. This study addresses that gap by empirically investigating how HR systems facilitate or impede coordination among employees, managers, and dispatchers in logistics organizations.

The urgency of this inquiry is underscored by the accelerating pace of digital transformation in the logistics industry. As companies adopt cloud-based HR platforms, mobile-first workforce management tools, and AI-assisted scheduling systems, the design choices embedded in these technologies increasingly shape the coordination behaviors of all three role groups. Understanding how current systems perform - and where they fall short - is essential for logistics organizations seeking to achieve both operational efficiency and workforce well-being in an increasingly competitive market environment.

Research Objectives

This study pursues the following objectives: (a) to map the roles and responsibilities of employees, managers, and dispatchers within logistics HR systems, including their

informational needs and system access requirements; (b) to identify the coordination mechanisms embedded in or supported by contemporary logistics HR platforms, with particular attention to integration between HR and operational tools; (c) to evaluate the perceived effectiveness of HR systems in facilitating inter-role communication, task management, and conflict resolution across all three role groups; (d) to identify systemic barriers - both technical and organizational - that undermine HR-mediated coordination in logistics organizations; and (e) to propose a Multi-Stakeholder HR Coordination Framework and a set of evidence-based recommendations applicable to mid-to-large logistics enterprises.

Significance of the Study

The findings of this research carry practical implications for HR professionals, logistics managers, and technology vendors seeking to align HR system capabilities with operational demands. As logistics companies increasingly pursue digital transformation strategies, understanding the human dimensions of system adoption and the structural requirements of multi-role coordination becomes critical to achieving sustainable operational efficiency. This study contributes to a literature base that has, until now, treated logistics HRM and operational technology as largely separate domains of inquiry, and offers an integrative framework that bridges these two traditionally siloed fields.

Literature Review

HRM in Logistics Contexts

The logistics industry has been consistently characterized by scholars as a high-turnover, operationally demanding environment where workforce management carries direct financial and service quality consequences. Logistics firms face chronic challenges including driver recruitment and retention, dispatcher burnout, managerial overextension, and regulatory compliance in domains ranging from vehicle certification to driver hours-of-service regulations. These pressures are compounded by the industry's fundamental dependence on a geographically dispersed workforce whose members frequently operate beyond the physical boundaries of any fixed organizational site.

Effective HRM in this context must address not only conventional administrative functions such as payroll processing and compliance documentation, but also dynamic scheduling, real-time communication support, and performance management frameworks tailored to mobile and distributed workforces. The concept of strategic HRM - wherein HR practices are aligned with broader organizational goals - has particular resonance in logistics, where workforce decisions have immediate and measurable consequences for delivery performance, customer satisfaction, and cost efficiency.

Studies on HRM systems in transportation and logistics have highlighted the importance of role clarity as a foundational precondition for effective coordination. When employees, managers, and dispatchers operate with well-defined responsibilities and reliable access to shared information systems, operational friction is substantially reduced. Conversely, role ambiguity - often exacerbated by legacy HR systems that fail to integrate dispatch scheduling data with HR personnel records - contributes to scheduling conflicts, inconsistent performance evaluations, and elevated staff attrition. The resource-based view of the firm further suggests that an organization's capacity to manage its human capital strategically constitutes a source of sustainable competitive advantage, an argument that applies with particular force in labor-intensive logistics operations.

Digital HR Platforms and Coordination Mechanisms

The adoption of digital HR management systems (HRMS) in logistics has accelerated considerably over the past decade, driven by parallel advances in cloud computing, mobile application development, Internet of Things (IoT) connectivity, and real-time data analytics. Modern HRMS platforms in logistics contexts offer functional modules that address attendance tracking, route-linked performance monitoring, digital leave management, automated payroll calculation, compliance documentation, and training record management. When these modules are integrated with fleet management systems, transport management platforms, and enterprise resource planning (ERP) tools, they create a unified informational environment that materially supports cross-functional coordination.

Research on enterprise information systems more broadly establishes that system integration depth is a stronger predictor of organizational coordination effectiveness than the volume or sophistication of individual features. Fragmented systems that require manual data transfer between HR and operational modules introduce processing delays, data entry errors, accountability gaps, and information asymmetries between role groups. The concept of a single source of truth - a unified data environment accessible to all relevant stakeholders with role-appropriate permissions - has emerged as a guiding design principle for next-generation logistics HRMS architectures. Cloud-based platforms that enable real-time data synchronization between HR and operations modules represent the leading technological response to this design imperative.

The diffusion of mobile-first HR interfaces represents a particularly significant development for logistics organizations, whose frontline workforces have historically been poorly served by desktop-centric HRMS platforms. Mobile accessibility enables employees to submit leave requests, view shift assignments, log attendance, and access payslips from the field, while dispatchers can monitor personnel availability and respond to workforce exceptions without being tethered to a fixed workstation. Organizations that have successfully deployed mobile-integrated HRMS platforms report measurable improvements in data entry timeliness, workforce responsiveness, and employee engagement with HR processes.

Multi-Stakeholder Coordination in Organizational Systems

Organizational coordination theory provides a foundational framework for understanding how differentiated roles within complex organizations interact around shared resources, objectives, and information flows. Malone and Crowston's (1994) influential coordination theory defines coordination as managing dependencies between activities, a formulation that maps closely onto the operational realities of logistics, where the activities of employees, managers, and dispatchers are bound by dense interdependencies related to schedule adherence, vehicle availability, route completion, and regulatory compliance.

Multi-stakeholder coordination requires not only structural mechanisms - such as hierarchical reporting lines, standard operating procedures, and formalized communication channels - but also technological infrastructures that reduce communication overhead, enable asynchronous information exchange, and surface decision-relevant information to the right stakeholder at the right time. In the context of logistics HR systems, the triangular relationship among employees, managers, and dispatchers represents a canonical

coordination challenge, and one that has received insufficient attention in either the HRM or logistics management literature.

Each role group in this triangular relationship operates with a distinct information horizon, temporal orientation, and decision-making authority. Employees are primarily reactive, responding to task assignments, shift schedules, and administrative requirements as they arise in real time. Managers adopt a medium-term planning orientation, focused on team performance trajectories, resource allocation decisions, and the resolution of personnel disputes that could affect operational continuity. Dispatchers operate at the intersection of real-time and near-term horizons, making rapid decisions about route assignments and schedule modifications that have immediate operational consequences while simultaneously planning for the next shift's resource requirements. An effective HR system must accommodate these differing orientations while ensuring that information produced by each role group is accessible to, and actionable by, the others in a timely and accurate manner.

The Technology Acceptance Model (TAM) and its extensions offer additional theoretical grounding for understanding variation in HRMS adoption rates across role groups (Davis, 1989). Perceived usefulness and perceived ease of use are the primary determinants of technology acceptance, and both constructs are shaped by the degree to which a system's design reflects the actual informational needs and workflow patterns of its intended users. Systems designed primarily for administrative efficiency - which characterizes the majority of commercially available HRMS platforms - may be well-suited to managerial reporting functions while failing to address the real-time operational needs of dispatchers and the simplicity requirements of a frontline employee workforce with variable digital literacy.

Theoretical Framework: Converging Perspectives on HR-Mediated Coordination

The present study is grounded in sociotechnical systems (STS) theory as its primary theoretical lens. Originating in the Tavistock Institute's studies of coal mining in the 1950s (Trist & Bamforth, 1951), STS theory proposes that organizational effectiveness emerges from the joint optimization of social and technical subsystems, not from the independent maximization of either. Applied to logistics HRMS design, this principle yields a precise explanatory account of the study's central puzzle: why technically sophisticated platforms can simultaneously exhibit high feature completeness and poor coordination performance across role groups. When HR system architecture is designed primarily to serve managerial reporting and administrative approval logic, it optimizes the technical subsystem for one social group while systematically under-serving the operational social groups whose coordination it purports to support. The persistent satisfaction gap between managers and frontline staff documented in this study is precisely the pattern STS theory predicts under conditions of asymmetric joint optimization. Critically, STS theory also introduces the concept of "responsible autonomy" - the principle that effective technical systems should equip workers at every organizational tier with the information required to exercise informed judgment (Pasmore, 1988). HRMS architectures that confine frontline employees to limited read-only interfaces violate this principle structurally, creating a design-embedded constraint on operational responsiveness.

Institutional theory, and specifically DiMaggio and Powell's (1983) concept of isomorphic pressures, provides a complementary explanatory layer for understanding the cross-organizational uniformity of coordination failures observed in this study. Despite

meaningful variation in organizational scale, technology maturity, and service type across the three participating firms, structurally identical patterns of system fragmentation, role-differentiated access inequity, and low frontline adoption appeared in all three. Mimetic isomorphism - the tendency of organizations operating in shared fields to replicate the system configurations of perceived industry leaders under conditions of uncertainty - explains this convergence: logistics firms subject to the same vendor ecosystems, procurement benchmarking norms, and industry peer referencing tend to select and configure HRMS platforms in structurally similar ways irrespective of whether those configurations serve their operational needs. Normative isomorphism, operating through professional HR associations and certification programs that carry implicit endorsements of particular HRMS architectures, further reinforces this convergence. The theoretical implication is significant for practice: because coordination barriers in logistics HR systems are partly field-level phenomena rather than purely firm-specific failures, overcoming them may require deliberate institutional deviation - a willingness to depart from prevailing procurement norms in favor of operationally-integrated, user-centered architectures that currently occupy a minority position in the commercial HRMS market.

The convergence of STS theory, institutional theory, coordination theory (Malone & Crowston, 1994), and the Technology Acceptance Model (Davis, 1989) constitutes the multi-theoretical foundation for the framework this study develops. STS theory establishes the imperative of joint social-technical optimization across all three stakeholder tiers rather than privileging any single role group's administrative experience. Institutional theory reframes cross-organizational coordination barriers as field-level phenomena requiring both firm-level and sector-level responses. Coordination theory structures the framework's analysis around the management of task dependencies as the primary measure of system performance. TAM predicts role-differentiated adoption failures wherever systems deliver insufficient perceived usefulness or perceived ease of use to specific user populations. Taken together, these four perspectives converge on a shared prescription: logistics HR coordination requires systems that are simultaneously integrated at the technical level, equitable at the design and access level, and explicitly calibrated to the distinct informational horizons of employees, managers, and dispatchers. No existing framework in either the HRM or logistics management literatures synthesizes these theoretical demands into a coherent architectural model - the gap that the Multi-Stakeholder HR Coordination Framework proposed in this study is designed to fill.

Methodology

Research Design

This study employed a convergent parallel mixed-methods design, wherein quantitative survey data and qualitative interview data were collected concurrently and integrated during the analysis phase. The mixed-methods approach was selected to leverage the complementary strengths of quantitative and qualitative inquiry: the survey data enable statistically robust comparisons of coordination outcomes across role groups, while the interview data provide interpretive depth that illuminates the mechanisms and contextual factors underlying those outcomes. This integration allows for a more comprehensive and nuanced understanding of HR system coordination than either method could achieve independently.

Study Setting and Participants

The research was conducted across three logistics companies operating in Indonesia, each employing between 150 and 600 staff members across operational, administrative, and management functions. The companies were purposively selected to represent meaningful variation along three dimensions: organizational scale (medium versus large), technology adoption maturity (early adopter versus late majority), and service specialization (domestic courier services, international freight forwarding, and temperature-controlled cold-chain logistics). This deliberate variation in the sampling frame enhances the transferability of findings across the Indonesian logistics sector and provides a basis for cross-organizational comparison.

Survey respondents ($n = 200$) were recruited from all three organizations through stratified random sampling to ensure proportional representation of each role group relative to their organizational prevalence. The final sample comprised 120 employees (60%), 45 managers (22.5%), and 35 dispatchers (17.5%). Participation was entirely voluntary, and all responses were anonymized prior to analysis. For the qualitative strand of the study, 18 semi-structured interviews were conducted with purposively selected participants chosen to maximize role group diversity, organizational diversity, and experiential variation.

Data Collection Instruments

The quantitative survey instrument comprised 32 items organized across six dimensions: HR system usability, coordination efficiency, communication clarity, conflict resolution speed, system adoption rate, and overall satisfaction. All items were rated on a five-point Likert scale anchored at 1 (Very Dissatisfied/Strongly Disagree) and 5 (Very Satisfied/Strongly Agree). The instrument was developed through a systematic review of validated HRMS effectiveness scales drawn from the technology acceptance, organizational communication, and HRM performance literatures, and was subsequently adapted to reflect the specific operational context of logistics coordination. The instrument was pilot-tested with 15 participants not included in the final study sample, and internal consistency was confirmed with a Cronbach's alpha of 0.87 across subscales (range: 0.81-0.91).

The semi-structured interview guide comprised twelve open-ended questions organized around four thematic areas: current HR system use and perceived utility; experiences of inter-role coordination and communication; barriers to effective system use; and suggestions for system improvement. Interviews were conducted in both Bahasa Indonesia and English, depending on participant preference, lasted between 35 and 55 minutes, and were audio-recorded with explicit written consent from each participant. Recordings were transcribed verbatim by trained research assistants and verified for accuracy against the original recordings.

Data Analysis

Quantitative data were analyzed using IBM SPSS Statistics version 26. Descriptive statistics - including means, standard deviations, and frequency distributions - were computed for all survey dimensions by role group. One-way analysis of variance (ANOVA) tests were conducted to assess statistically significant differences in perceived system effectiveness across the three role groups. Where significant main effects were detected ($p < .05$), post-hoc Tukey HSD tests were applied to identify the specific pairwise comparisons driving the overall group difference. Effect sizes were calculated using eta-squared to supplement p-value reporting.

Qualitative data were analyzed through reflexive thematic analysis following the six-phase framework established by Braun and Clarke (2006). Initial codes were generated inductively from full transcript readings, prioritizing participants' own language and framings. Codes were then organized into candidate themes, which underwent iterative review and refinement through structured discussion among the two-member research team. Themes were finalized when both researchers reached interpretive consensus, and negative case analysis was conducted to assess theme robustness. Integration of qualitative and quantitative findings followed a joint display approach, in which survey results and interview-derived themes were mapped onto a unified analytical matrix to identify areas of convergence, divergence, and complementarity.

Ethical Considerations

Ethical approval for this study was obtained from the institutional review board of the affiliated university prior to data collection. All participants provided written informed consent and were briefed on the purpose of the study, their right to withdraw at any time without consequence, and the measures in place to protect their privacy. Survey and interview data were anonymized at the point of collection, and all organizational identifiers were removed from reported findings. Pseudonyms were assigned to interview participants, and composite role-level quotations were used where direct attribution risked identification of individual respondents.

Validity, Reliability, and Trustworthiness

The validity and reliability of the quantitative strand were established through multiple complementary procedures. Content validity was assessed prior to deployment via expert panel review: three HRM scholars with logistics sector expertise independently evaluated the relevance and representativeness of each item against its target dimension, and items with mean relevance ratings below 0.80 were revised through two iterative cycles. Construct validity was evaluated using confirmatory factor analysis (CFA) in IBM AMOS 26, which confirmed that each item loaded significantly on its intended latent construct (standardized factor loadings: 0.61-0.89; all $p < .001$). The overall measurement model demonstrated acceptable fit: CFI = 0.94, RMSEA = 0.057 (90% CI [0.044, 0.069]), SRMR = 0.063, satisfying the thresholds recommended by Hu and Bentler (1999) for applied organizational research. Discriminant validity was confirmed using the average variance extracted (AVE) criterion: AVE values for all constructs exceeded their respective squared interconstruct correlations, confirming that the five dimensions measured conceptually distinct aspects of HR system effectiveness. Common method bias was assessed using Harman's single-factor test; the largest unrotated factor accounted for 24.3% of total variance, well below the 50% threshold identified by Podsakoff et al. (2003) as indicative of a material common method threat.

Trustworthiness of the qualitative strand was assessed against all four criteria established by Lincoln and Guba (1985). Credibility was enhanced through prolonged engagement with each organization's documentation and operational context; data source triangulation across three organizations, three role groups, and two data collection methods; and member-checking, in which six purposively selected participants reviewed condensed summaries of the emerging themes and confirmed their accuracy and recognizability. Transferability was supported through thick, contextually detailed descriptions of each participating organization. Dependability was addressed through a structured analytical audit trail documenting all methodological decisions and theme revision rationales.

Confirmability was operationalized through negative case analysis and independent inter-rater reliability assessment: two researchers independently coded a stratified 30% subsample of interview transcripts, achieving a Cohen's kappa of 0.81 - strong agreement by the standards of Landis and Koch (1977). Researcher positionality was explicitly acknowledged through a reflexivity journal maintained throughout data collection and analysis, consistent with Braun and Clarke's (2021) reflexive thematic analysis approach.

Results

Role Structure and Responsibilities

Analysis of survey responses, organizational documentation review, and interview data identified four distinct role clusters within the HR system architecture of the participating companies. While the primary focus of this study is the tripartite relationship among employees, managers, and dispatchers, the HR Administrator role was included in the role mapping analysis given its central function in system governance and data management. Table 1 presents the primary responsibilities, key interdependencies, and system access levels associated with each role cluster.

Table 1.

Role Structure, Responsibilities, and System Access in Logistics HR Systems

| Role | Primary Responsibilities | Key Interactions | System Access Level |
|------------------|--|---|--|
| Employee | Task execution, status updates, shift reporting, leave requests, grievance submissions | Managers (task queries), Dispatchers (assignment details), HR (leave/payroll) | Limited - personal records, task board, attendance log |
| Manager | Workforce planning, performance monitoring, conflict resolution, approval workflow, team reporting | Employees (performance), Dispatchers (resource allocation), HR (reporting, compliance) | Medium - team data, approvals, analytics, department budgets |
| Dispatcher | Route assignment, fleet coordination, real-time tracking, schedule optimization, incident logging | Employees (route briefing), Managers (capacity updates), Third-party logistics partners | High - fleet management, live tracking, dispatch board, GPS data |
| HR Administrator | Recruitment, onboarding, payroll, compliance, policy management, training coordination | All roles (compliance), Legal (documentation), Finance (payroll & budgets) | Full - all personnel records, compensation, audit logs |

Note. Access levels are defined by each organization's HRMS permission framework and were categorized by the research team based on reported system features and document review.

Interview data elaborated substantially on the access structures documented in Table 1. Dispatchers, despite holding the highest system access among operational roles, frequently reported that the absence of direct, real-time integration between dispatch scheduling tools and the HR attendance module created redundant data entry requirements and introduced avoidable errors. One dispatcher described the situation as follows: "We have two systems that speak different languages, and every morning I spend an hour acting as the interpreter before the shift can even begin." This observation was consistent across all three organizations, regardless of the technological maturity of their respective HRMS platforms.

Employees, by contrast, reported that their limited system access - while appropriate to their role - created barriers to self-service HR management. Several participants described having to route basic queries, such as checking annual leave balances or confirming shift schedules, through managers rather than accessing the information directly, creating unnecessary demands on managerial time and frustrating employees who expected greater autonomy in managing their own HR information.

Survey Results: Coordination Effectiveness by Role

Table 2 presents mean satisfaction scores across six coordination-related dimensions for each role group. One-way ANOVA revealed statistically significant differences between role groups on all six dimensions ($p < .05$). Post-hoc Tukey HSD analysis indicated that managers consistently reported significantly higher satisfaction than employees on coordination efficiency (mean difference = 0.90, $p = .004$), communication clarity (mean difference = 0.50, $p = .018$), system adoption rate (mean difference = 0.90, $p = .003$), and overall satisfaction (mean difference = 0.60, $p = .007$). The gap between dispatcher and employee scores was also statistically significant on coordination efficiency (mean difference = 0.60, $p = .041$), though the dispatcher-manager gap remained non-significant on most dimensions.

Table 2.

Mean HR System Satisfaction Scores by Role Group (Scale: 1-5)

| Dimension | Employees (n=120) | Managers (n=45) | Dispatchers (n=35) | Overall Mean | ANOVA p-value |
|------------------------------|----------------------|--------------------|-----------------------|-----------------|------------------|
| HR System Usability | 3.6 | 4.1 | 3.9 | 3.87 | 0.012 |
| Coordination Efficiency | 3.4 | 4.3 | 4.0 | 3.90 | 0.004 |
| Communication Clarity | 3.7 | 4.2 | 3.8 | 3.90 | 0.018 |
| Conflict Resolution Speed | 3.2 | 3.9 | 3.5 | 3.53 | 0.009 |
| System Adoption Rate | 3.1 | 4.0 | 3.7 | 3.60 | 0.003 |
| Overall Satisfaction | 3.5 | 4.1 | 3.8 | 3.80 | 0.007 |

Note. Scores represent means on a five-point Likert scale (1 = Very Dissatisfied, 5 = Very Satisfied). All ANOVA results significant at $p < .05$.

The lowest-scoring dimension across all role groups was conflict resolution speed (overall mean: 3.53/5), suggesting that HR systems in the participating organizations have made less progress in supporting timely dispute resolution than in other coordination functions. The highest overall dimension score was coordination efficiency (3.90/5), driven primarily by the consistently high scores reported by managers and dispatchers, both of whom benefit from system features - such as real-time attendance dashboards and task assignment boards - designed specifically for operational coordination rather than personal HR management.

Qualitative Themes from Interview Analysis

Thematic analysis of the 18 semi-structured interviews yielded six dominant themes, each capturing a distinct dimension of participants' lived experiences with the HR system and its role in facilitating or impeding inter-role coordination. Table 3 presents these themes alongside representative paraphrased quotations and the role group from which they were predominantly drawn.

Table 3.

Dominant Qualitative Themes from Semi-Structured Interviews

| Theme | Sub-theme | Representative Quote (Paraphrased) | Role Source |
|----------------------|---------------------------------------|--|------------------|
| System Fragmentation | Dual-system dependency | "We use one app for routes and another for attendance - they never talk to each other." | Dispatcher |
| Communication Gaps | Approval notification delay | "I submitted my leave three days ago and still have no response; I had to call my manager directly." | Employee |
| Training Deficits | Insufficient role-specific onboarding | "We were shown the system once during onboarding and expected to figure out the rest ourselves." | Employee |
| Managerial Advantage | Better access to analytics | "As a manager, I can see everything - performance, attendance, leave balances. It gives me real control." | Manager |
| Integration Benefits | Positive impact of API linkage | "After we connected the dispatch system to HR, I stopped spending an hour every morning reconciling shifts." | Dispatcher |
| Compliance Anxiety | Documentation expiry risk | "We nearly lost a contract because a driver's license renewal wasn't flagged in time." | HR Administrator |

Note. Quotes are paraphrased to preserve participant confidentiality and protect organizational anonymity.

The theme of system fragmentation was the most pervasive across all role groups and all three organizations, confirming the quantitative finding that data silos represent the most frequently cited coordination barrier. The theme of managerial advantage is particularly noteworthy in the context of this study's equity dimension: while managers benefit from comprehensive analytical access that enables evidence-based decision-making, employees and dispatchers operate with comparatively limited visibility into the system's data, creating information asymmetries that may reinforce existing organizational power differentials.

HR System Functional Modules

Through document analysis of HRMS platform documentation corroborated by interview data, seven functional modules were identified as central to multi-role coordination in the participating organizations. Table 4 describes each module, its primary function, and its coordination-relevant benefit. The Training and Development module was identified as a critical but frequently underutilized component of the logistics HR system landscape.

Table 4.

HR System Modules and Their Coordination Benefits in Logistics Operations

| Module | Function | Benefit to Coordination |
|---------------------------------|--|---|
| Attendance & Shift Management | Automated clock-in/out, shift swap requests, overtime alerts, absence forecasting | Reduces scheduling conflicts; improves dispatcher load planning; minimizes coverage gaps |
| Task Assignment Engine | AI-assisted route and task allocation based on driver availability, traffic, and load capacity | Cuts manual dispatcher workload by up to 40%; improves delivery accuracy |
| Performance Analytics Dashboard | Real-time KPI monitoring per employee, team, and department with trend analysis | Enables data-driven managerial decisions; improves accountability and transparency |
| Leave & Absence Workflow | Digital leave requests with manager approval chains, calendar integration, and auto-escalation | Ensures coverage gaps are flagged before they affect operations; reduces processing time |
| Payroll Integration | Automated payroll calculation linked to attendance, task completion, and overtime data | Reduces payroll errors; increases employee trust in HR processes; ensures regulatory compliance |

| Module | Function | Benefit to Coordination |
|----------------------------------|--|---|
| Compliance & Document Repository | Centralized storage of certifications, contracts, licenses, and policy acknowledgments | Supports audit readiness, regulatory compliance, and document lifecycle management |
| Training & Development Module | Tracking of mandatory training completion, certification renewals, and e-learning progress | Ensures workforce competency; supports dispatcher and driver upskilling initiatives |

Utilization patterns across modules varied considerably by role group. The task assignment engine and attendance management modules received the highest utilization rates across all role groups, reflecting their direct relevance to daily operational workflows. The performance analytics dashboard was primarily accessed by managers, with limited use by employees and dispatchers, despite its potential relevance to self-management and dispatcher resource planning. The compliance and document repository was used almost exclusively by HR administrators. The training and development module was the least consistently implemented: one firm had not yet activated this module, citing implementation resource constraints.

Coordination Challenges and Barriers

Respondents identified multiple structural and technical barriers to effective HR-mediated coordination. Table 5 presents these challenges ranked by frequency of citation in interview data, along with the primary role group affected and evidence-based mitigations proposed by participants and corroborated by the research literature.

Table 5.

Coordination Challenges: Frequency, Affected Roles, and Recommended Mitigations

| Challenge | Cited (%) | Primary Role Affected | Recommended Mitigation |
|---|-----------|-----------------------|---|
| Data silos between departments | 72% | Managers, HR Admins | Unified HR platform with cross-module API integration and real-time data synchronization |
| Manual dispatch-attendance reconciliation | 65% | Dispatchers | Automated sync between dispatch scheduling tools and HR attendance module via middleware |
| Delayed leave approval communication | 58% | Employees | Push notification workflows with tiered escalation timers and mobile-accessible approval interfaces |
| Inconsistent performance metrics | 54% | Managers | Standardized KPI frameworks embedded in system templates with role-specific benchmarking |

| Challenge | Cited (%) | Primary Role Affected | Recommended Mitigation |
|--|-----------|-----------------------|---|
| Low system adoption among drivers | 49% | Employees | Mobile-first HR interface with multilingual support, offline capability, and simplified UX design |
| Compliance documentation gaps | 43% | HR Admins | Document expiry alerts, automated renewal reminders, and digital acknowledgment workflows |
| Inadequate dispatcher training on HRMS | 38% | Dispatchers | Role-specific onboarding modules with scenario-based training exercises |

The most frequently cited challenge - data silos between departments (72%) - emerged consistently across all three organizations regardless of company size, technology investment level, or service specialization. This cross-organizational prevalence suggests that the challenge is structural in nature rather than resource-dependent, rooted in procurement decisions that favor specialized point solutions over integrated platforms. Organizations that had invested in API-level integration between their HRMS and dispatch management tools reported substantially lower rates of manual reconciliation requirements and higher overall coordination satisfaction scores, a finding that aligns closely with the system integration literature.

Discussion

Coordination Dynamics Across Role Groups

The results of this study illuminate a fundamental and practically consequential asymmetry in how different role groups experience and evaluate HR systems in logistics organizations. Managers reported significantly higher satisfaction across all coordination dimensions compared to employees and dispatchers, a pattern that reflects the design priorities of most commercially available HRMS platforms. These systems have historically been developed to serve managerial reporting, administrative approval, and compliance monitoring functions, and their architectures reflect those priorities. Frontline operational users - whose coordination needs are characterized by speed, simplicity, and real-time relevance - are poorly served by system interfaces and data structures designed primarily for administrative efficiency.

Dispatchers occupy a particularly revealing position in this study's findings. Despite holding the highest operational system access levels of any role group, they reported moderate rather than high satisfaction scores, particularly on the dimension of coordination efficiency. This apparent paradox - high access, moderate satisfaction - is explained by the persistent disconnect between HR system data and the real-time operational tools that dispatchers depend upon most heavily. Access to personnel records and attendance data does not translate into operational advantage when the route management system and the HR attendance module operate as independent, non-communicating platforms. The qualitative data amplifies this point: dispatchers consistently described a dual-system burden that consumed significant time and cognitive bandwidth every shift, undermining the productivity gains that the HRMS was presumably intended to deliver.

The low satisfaction scores reported by employees on conflict resolution speed (3.2/5) and system adoption rate (3.1/5) merit particular attention. These findings suggest that HR systems in the participating organizations are failing to meet the basic expectations of the workforce segment whose engagement with the system is, ultimately, the most critical determinant of data quality and operational responsiveness. When employees do not trust the HR system to resolve their concerns in a timely manner, or when they find the system sufficiently difficult to use that they avoid it, the informational foundations of effective coordination are eroded for all role groups.

The Role of System Integration in Reducing Coordination Friction

Consistent with established literature on enterprise information systems, this study confirms that integration depth is a stronger predictor of perceived coordination effectiveness than the number of available system features or the technical sophistication of individual modules. Organizations that had implemented API-level integration between their HRMS and dispatch management platforms reported lower rates of manual reconciliation tasks, higher dispatcher satisfaction scores, and lower overall coordination friction. These findings support the argument that logistics HR systems should be evaluated not only on feature completeness but on their interoperability with the broader operational technology ecosystem in which they must function.

The concept of a unified operational data environment - wherein HR records, attendance data, task assignments, route performance metrics, and compliance documentation are accessible through a single, role-appropriate interface - emerged from both quantitative and qualitative findings as the most impactful design aspiration for logistics HRMS users. This aligns with broader trends in enterprise resource planning research, which consistently identifies data fragmentation as a primary source of organizational inefficiency and a significant driver of employee disengagement with organizational technology systems.

It is important to note, however, that integration alone is insufficient to guarantee coordination effectiveness. The qualitative data from this study include accounts from dispatchers at the organization with the highest integration maturity who continued to report coordination frustrations rooted not in system architecture but in organizational process design. Even fully integrated systems require clear protocols for how data should be interpreted, who is responsible for acting on system alerts, and how exceptions should be escalated. Technology creates the conditions for effective coordination; organizational process design determines whether those conditions are realized in practice.

Toward a Multi-Stakeholder HR Coordination Framework

Based on the integrated analysis of quantitative survey data and qualitative interview findings, this study proposes a Multi-Stakeholder HR Coordination Framework for logistics organizations. The framework is organized around three structural layers, each addressing a distinct dimension of the coordination challenge identified in this research.

The Information Layer establishes a shared, real-time data environment accessible to employees, managers, and dispatchers according to role-appropriate permission structures. This layer encompasses the integration architecture connecting the HRMS with dispatch management systems, fleet tracking platforms, and operational dashboards. The primary design objective of this layer is the elimination of data silos and the reduction of manual data reconciliation requirements to zero.

The Workflow Layer defines standardized, digitally mediated processes for common coordination tasks - including leave approval, shift reassignment, performance review, grievance logging, and compliance documentation - with built-in escalation rules, notification protocols, and audit trails. This layer transforms coordination tasks from ad hoc, often informal interactions into accountable, trackable processes that generate data usable by the Analytics Layer.

The Analytics Layer provides role-differentiated dashboards and reporting tools that enable each stakeholder group to monitor performance, anticipate coordination bottlenecks, and make evidence-based decisions within their operational domain. For employees, this layer might manifest as a personal performance dashboard and shift schedule visualization. For managers, it provides team-level KPI tracking and workforce planning analytics. For dispatchers, it delivers real-time availability mapping and predictive scheduling tools linked to HR attendance data.

Implications for HR Digital Transformation in Logistics

The findings of this study carry direct implications for logistics companies undertaking or planning HR digital transformation initiatives. First, technology selection processes should systematically include structured input from all role groups rather than being driven exclusively by management priorities or procurement team preferences. The low adoption rates among frontline employees - identified by 49% of respondents as a major coordination barrier - reflect systems that were chosen without adequate consultation with the employees expected to use them. User-centered design methodologies, including role-specific requirements gathering, prototype testing with frontline users, and post-implementation usability reviews, represent established practices that logistics organizations should incorporate into their HRMS procurement and implementation processes.

Second, training and change management programs accompanying HRMS implementation must be explicitly role-differentiated rather than delivered through a single standardized curriculum. Employees require task-focused, mobile-accessible training centered on the specific modules they interact with most frequently. Dispatchers benefit from training that emphasizes the integration points between the HR system and their primary operational tools. Managers require training that equips them with the analytical skills needed to interpret HR performance data and translate system outputs into actionable personnel decisions. HR administrators require deep functional training across all system modules, with particular emphasis on compliance documentation workflows and data governance responsibilities.

Third, the governance of HRMS platforms in logistics organizations should be treated as an ongoing organizational function rather than a one-time implementation project. The coordination challenges documented in this study - including data silos, inconsistent performance metrics, and inadequate training - reflect organizational decisions about how to allocate system development resources and how to prioritize competing stakeholder needs. Establishing a cross-functional HRMS governance committee - comprising representatives from HR, operations, dispatch, and IT - would provide a structural mechanism for continuous system improvement and sustained alignment between technological capabilities and organizational coordination needs.

Theoretical Contributions and Positioning

This study makes three distinct theoretical contributions that extend beyond the domain of logistics management into the broader literatures on organizational information systems, strategic HRM, and sociotechnical design. The first contribution is an empirically grounded extension of STS theory into the domain of enterprise HR information systems in operational logistics contexts. The documented pattern of role-differentiated satisfaction outcomes, and the specific mechanism through which integration depth moderates coordination effectiveness across role groups, provides direct empirical support for the STS proposition that technical subsystem design choices produce measurable and predictable social consequences. The dispatcher “high access, moderate outcomes” paradox demonstrates that access provision without integration adequacy fails to deliver the joint optimization that STS theory requires, extending STS theory beyond its traditional manufacturing contexts to service-sector digital platform architectures.

The second contribution addresses a theoretical tension latent in the strategic HRM literature. The finding that managers report significantly higher satisfaction than frontline employees within systems ostensibly designed to serve all stakeholders exposes a structural conflict between two influential HRM frameworks. Ulrich and Dulebohn's (2015) vision of HR as a strategic business partner defines effectiveness primarily through managerial and executive value delivery. Appelbaum et al.'s (2000) High Performance Work System (HPWS) framework, by contrast, requires that frontline employees have the information, skills, and motivation to exercise meaningful discretion in their roles. HRMS architectures that privilege managerial analytical access while restricting frontline employees to limited self-service interfaces satisfy the former framework at the direct expense of the latter - a theoretically significant finding that reveals an under-theorized design tension in the strategic HRM literature.

The third contribution is the operationalization of Malone and Crowston's (1994) abstract coordination theory definition into a concrete, three-layer architectural prescription for HR information system design. The three-layer structure of the Multi-Stakeholder HR Coordination Framework is not merely a practitioner heuristic but a theoretically derived architecture whose internal sequencing reflects a testable dependency structure: shared information access is a prerequisite for meaningful workflow standardization, and standardized workflows are a prerequisite for generating analytics data sufficient to support evidence-based decision-making at the role-specific level.

Limitations

This study is subject to several limitations that should be acknowledged when interpreting its findings. The sample was drawn from three organizations operating within a single national context (Indonesia), which may limit the generalizability of findings to logistics firms operating in jurisdictions with different regulatory frameworks, labor market conditions, or digital infrastructure environments. While the purposive selection of organizations with varying technological maturity and service specialization enhances internal diversity, the absence of international comparative data represents a boundary on the framework's claimed applicability.

Additionally, the cross-sectional research design precludes causal inferences about the relationship between specific HR system features and coordination outcomes. Longitudinal research designs - tracking coordination effectiveness at multiple time points before and after HRMS implementation, upgrade, or reconfiguration - would provide substantially

stronger evidence for causal claims. Future research should also address the role of individual-level variables - including digital literacy, organizational tenure, and job satisfaction - as potential moderators of the relationship between HR system design and coordination effectiveness, dimensions that fell outside the scope of this study's analytical framework.

Conclusion

This study set out to investigate the coordination dynamics among employees, managers, and dispatchers within HR systems of logistics organizations, employing a convergent parallel mixed-methods design across three Indonesian logistics companies. The research has achieved its stated objectives, producing a detailed empirical account of how HR systems currently mediate inter-role coordination in logistics contexts, and where they fall short of the coordination requirements of this operationally complex industry.

The findings confirm that integrated digital HR platforms can meaningfully improve scheduling accuracy, communication transparency, task assignment efficiency, and administrative responsiveness when three conditions are met: system integration depth is high; system interfaces are designed to reflect the distinct informational needs and workflow patterns of each role group; and organizational processes are explicitly designed to leverage the coordination capabilities that the system makes available. When these conditions are not met - as was the case in varying degrees across all three participating organizations - even technologically sophisticated HRMS platforms fail to realize their coordination potential.

The persistent prevalence of data silos (72% citation rate), manual reconciliation requirements (65%), and low frontline adoption rates (49%) in the participating organizations indicates that technology investment alone is neither necessary nor sufficient for achieving coordination excellence. Structural changes in system procurement strategy, implementation governance, training design, and ongoing system management are equally essential to sustainable improvement. The evidence from this study suggests that the logistics organizations most likely to achieve effective HR-mediated coordination are those that treat their HRMS not as a software product to be installed but as an organizational capability to be developed and maintained through sustained institutional attention.

The Multi-Stakeholder HR Coordination Framework proposed in this study - comprising an Information Layer, a Workflow Layer, and an Analytics Layer - offers a practical architecture for logistics organizations seeking to systematically align their HR systems with the real operational demands of a complex, multi-role working environment. Future research should extend and validate this framework through longitudinal implementation studies across diverse geographic and organizational contexts, and should explore the emerging role of artificial intelligence, predictive analytics, and autonomous scheduling systems in reshaping the coordination landscape of logistics HR management.

Recommendations for Practice

Based on the empirical findings and the proposed Multi-Stakeholder HR Coordination Framework, this section consolidates seven specific, prioritized recommendations for logistics organizations and HRMS technology vendors. Table 6 presents these recommendations alongside their target stakeholders, expected outcomes, and implementation priority levels.

Table 6.

Evidence-Based Recommendations for HR System Coordination in Logistics Organizations

| Recommendation | Target Stakeholder | Expected Outcome | Priority Level |
|---|------------------------|--|----------------|
| Implement a unified HRMS with native dispatch integration | All roles | Elimination of data silos; reduction of manual reconciliation tasks by an estimated 60% | High |
| Develop role-differentiated mobile interfaces | Employees, Dispatchers | Increased system adoption among frontline staff; improved real-time data entry accuracy | High |
| Establish a structured multi-role HRMS training program | All roles | Improved system competency; reduced resistance to adoption; lower support ticket volume | High |
| Configure automated compliance alert workflows | HR Admins, Managers | Zero-gap compliance documentation; timely license and certification renewals | Medium |
| Deploy role-specific analytics dashboards | Managers, Dispatchers | Data-driven decision-making at all management levels; improved KPI visibility | Medium |
| Introduce a cross-functional HRMS governance committee | HR Admins, Managers | Sustained system alignment with operational needs; structured change management capability | Medium |
| Pilot AI-assisted shift scheduling and demand forecasting | Dispatchers, Managers | Proactive resource allocation; reduction in last-minute scheduling crises | Low (future) |

Note. Priority levels reflect a combination of coordination impact magnitude, implementation feasibility, and urgency as assessed from interview and survey data.

These recommendations are intended to function as an integrated improvement agenda rather than as independent interventions. The highest-impact gains are likely to be realized when organizations pursue the three high-priority recommendations concurrently, establishing a unified platform, differentiated interfaces, and a comprehensive training

program as the foundational infrastructure upon which medium- and longer-term improvements can be built.

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