

Digital Transformation in Personnel Management: Organizational Communication Strategy of e-HRM at the Sumatra III River Basin Agency

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Abstract

Digital transformation in the public sector requires government organizations to optimize information technology, including personnel management through Electronic Human Resources Management (e-HRM). The Sumatra III River Basin Agency has implemented e-HRM since 2017; however, its utilization has not been fully optimized due to low employee participation in updating personnel data. This study aims to analyze organizational communication strategies in the implementation of e HRM from the aspects of planning, implementation, and evaluation. This research employed a descriptive qualitative approach through in-depth interviews, observation, and documentation. The findings reveal that communication planning was carried out through top-down policies, socialization, and training, but remained largely instructional in nature. Communication implementation involved vertical, horizontal, and diagonal flows, with vertical communication as the dominant pattern. Communication evaluation has been conducted; however, it remains administrative and has not been sustainable in fostering changes in organizational work culture. This study confirms that the success of e-HRM implementation depends not only on technological readiness but also on participatory, collaborative, and sustainable organizational communication strategies to support bureaucratic digital transformation..

Keywords

organizational communication, communication strategy, e-HRM, digital transformation, public bureaucracy

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1. INTRODUCTION

The development of information technology has encouraged government institutions to undertake digital transformation in organizational governance, including personnel data management. The digitalization of personnel administration through Electronic Human Resource Management (e-HRM) is essential to improve organizational efficiency, accuracy, transparency, and service effectiveness (Wahyudi & Park, 2014; Bondarouk et al., 2009).



The Sumatra III River Basin Agency (Balai Wilayah Sungai/BWS Sumatera III), as a Technical Implementation Unit under the Ministry of Public Works, has implemented e-HRM since 2017 as part of the modernization of personnel administration. This system is expected to support accurate, up-to-date, and integrated employee data management for administrative purposes, promotions, transfers, and employee evaluations. However, although all employees already have e-HRM accounts, the level of application utilization remains low. Most employees do not routinely update their personnel data, resulting in information delays, coordination barriers between units, and low effectiveness in data management.

These issues indicate that the primary obstacle to e-HRM implementation does not solely lie in the technical aspects of the application, but rather in the suboptimal organizational communication strategy in fostering employee understanding, participation, and commitment. The socialization and training that have been conducted still tend to focus on delivering technical procedures, and therefore have not fully succeeded in developing strategic awareness regarding the importance of e-HRM as part of the organization's digital transformation.

From the perspective of Pace and Faules, organizational communication is not merely the delivery of information, but a process of message exchange that occurs through vertical, horizontal, and diagonal communication flows to create coordination, shared meaning, and member involvement within the organization. Various studies indicate that policy implementation barriers in public organizations are often caused not only by technical factors, but also by suboptimal internal communication patterns. Bartels (2010) emphasized that the effectiveness of vertical and horizontal communication significantly influences employee engagement and organizational identification, while Supit, G. R. A. study (2023) on public institutions in Indonesia showed that the dominance of vertical communication without strengthening horizontal and diagonal communication can hinder organizational work effectiveness.

Therefore, the success of e-HRM implementation depends not only on technological readiness, but also on the organization's ability to design informative, participatory, and sustainable communication strategies. This study aims to analyze the organizational communication strategy of BWS Sumatra III in utilizing e-HRM for personnel data management, with a focus on the planning, implementation, and evaluation of organizational communication.

Previous studies have extensively examined the implementation of Electronic Human Resource Management (e-HRM) and organizational communication in both public and private sector organizations. Research conducted by Bondarouk et al. (2009) focused on the effectiveness of e-HRM systems from a multi-stakeholder perspective, while Bartels et al. (2010) highlighted the role of vertical and horizontal communication in fostering employee engagement and organizational identification. In the Indonesian context, studies such as Supit (2023) have discussed organizational communication patterns in public institutions, and recent studies on digital transformation have emphasized the importance of technology adoption and employee readiness in supporting bureaucratic reform. However, these studies have generally examined e-HRM implementation and organizational communication as separate issues and have not specifically explored how organizational communication strategies are planned, implemented, and evaluated in supporting e-HRM utilization within water resources management agencies in Indonesia. Therefore, this study addresses this gap by analyzing the organizational communication strategy employed in the implementation of e-HRM at the Sumatra III River Basin Agency (Balai Wilayah Sungai Sumatera III), with a particular focus on communication planning, implementation, and evaluation as key elements supporting digital transformation in personnel management. (sudah di revisi)

2. METHODS

This study employed a descriptive qualitative approach to examine organizational communication strategies in the utilization of the Electronic Human Resource Management (e-HRM) application at the Sumatra III River Basin Agency (BWS Sumatera III). Primary data were collected through in-depth interviews, while secondary data were obtained from organizational documents, e-HRM reports, internal policies, and socialization records.

The study involved seven informants, comprising four key informants (the Head of the Agency, the Head of General Affairs and Administration, the Head of Operations and Maintenance Division, and the Head of the Water Resources Information, Planning, and Programming Section/KPISDA) and three supporting informants (one Human Resource Analyst and two administrative staff members). Informants were selected using purposive sampling to ensure they possessed direct involvement, relevant responsibilities, and sufficient experience in organizational communication and the implementation of e-HRM.

Data were analyzed using the interactive model of Miles, Huberman, and Saldaña, which consisted of three stages: data reduction through coding and categorization, data display using thematic narratives and tables, and verification and conclusion drawing through continuous comparison of

findings across interviews, observations, and documents.

To ensure the trustworthiness of the findings, source triangulation was employed by comparing data obtained from interviews, observations, and organizational documents. The interpretations were further verified with selected informants to enhance the credibility and consistency of the research findings.

3. FINDINGS AND DISCUSSION

Findings

3.1 Organizational Communication Planning in the Utilization of the e-HRM Application at the Sumatra III River Basin Agency

Based on the interview findings, the planning for e-HRM utilization at BWS Sumatra III began with the identification of personnel administration problems that had previously been carried out manually, dispersed across various units, and not yet digitally integrated. This condition created obstacles in data updating, work efficiency, and the accuracy of personnel information. In response to the need for administrative modernization, the implementation of e-HRM was carried out in accordance with the policies of the Ministry of Public Works and Public Housing (PUPR) as the parent institution, making the planning process top-down in nature through structural directives from the central authority to the implementing unit. Daniel, Head of BWS Sumatra III, stated:

"Previously, employee data management was still manual, so whenever there were data updates or promotion matters, delays often occurred because everything had to be checked one by one. That became our main consideration in planning the use of e-HRM." (Daniel, Head of BWS Sumatra III, January 23, 2026)

This statement indicates that the planning for e-HRM utilization was rooted in the direct experience of leadership in managing daily personnel administration. At this stage, the organization established its primary objective as the digitalization of personnel data management to make it more effective, integrated, and supportive of internal bureaucratic reform. Leadership played a crucial role as the policy direction setter, legitimacy provider, and implementation driver at the organizational level. Meanwhile, administrators and the personnel division performed operational functions as intermediaries between policy, the application system, and employees as users.

The communication media used included formal delivery through official memos, internal meetings, WhatsApp groups, direct socialization, and technical training on application usage. However, based on interview findings, the planning focus was not only directed at introducing the technical aspects of the application, but also at preparing employees to face changes in the work system from a

manual administrative pattern toward a digital work culture. Rina Anggia Prawesti, Human Resources Analyst, explained:

“Initial information about e-HRM is usually delivered through meetings, and then if there is further information, we share it through the WhatsApp group so it can quickly reach all employees.” (Rina Anggia Prawesti, Human Resources Analyst, January 23, 2026)

Based on these interview results, it can be understood that the organizational communication pattern in planning e-HRM utilization did not rely solely on formal face-to-face communication, but also utilized digital communication media to accelerate information dissemination.

Nevertheless, the communication approach at the initial stage was still dominated by an instructional pattern, causing some employees to perceive e-HRM more as an administrative obligation rather than as a strategic part of organizational transformation.

Tabel 1. Thematic Findings of Organizational Communication Planning in e-HRM Implementation

Theme	Representative Evidence	Interpretation
Communication objectives	Planning emphasized improving the accuracy and integration of personnel data	Communication planning supported digital personnel governance.
Leadership commitment	Leaders communicated implementation through meetings, official memoranda, and direct instructions.	Leadership functioned as the main communication driver.
Communication channels	WhatsApp groups, meetings, memoranda, and technical training were used before implementation.	Multiple communication channels ensured information dissemination.
Capacity building	Employees participated in socialization and technical training before using e-HRM.	Planning focused on increasing technical readiness.

Expected employee behavior	Employees were encouraged to independently update personnel information.	Planning aimed to improve participation and data accuracy.
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Table 2 summarizes the major themes emerging from the planning stage of organizational communication. The findings indicate that communication planning was not limited to disseminating information about the e-HRM application but also involved leadership commitment, multiple communication channels, and employee capacity-building activities to support digital personnel management.

3.2 Implementation of Organizational Communication in the Utilization of the e-HRM Application at the Sumatra III River Basin Agency

The implementation of the communication strategy took place through three flows of organizational communication. First, vertical communication became the most dominant pattern through official memos, leadership instructions, WhatsApp groups, and formal training. This form of communication was effective in delivering policies; however, it has not fully encouraged active participation.

Gambar 1. Memo



The hierarchical delivery of information helped employees understand the objectives of e-HRM implementation as well as the changes in the work system that the organization intended to apply. With direct guidance from superiors, employees found it easier to understand their duties and the steps that needed to be taken during the transition process toward a digital system. In addition, communication conducted through structural channels also helped reduce misinformation and improve the clarity of messages received by employees.

Second, horizontal communication occurred among employees through informal discussions, the sharing of experiences, and mutual assistance in using the application. Although this pattern was effective in supporting technical adaptation, it had not yet been institutionally structured. Virdiyana Yuser, Head of KPISDA, stated:

"If there are employees who are still confused, we usually explain it directly. Sometimes fellow employees also ask each other questions and help one another so that everyone can use e-HRM together." (Virdiyana Yuser, Head of KPISDA, interview, January 24, 2026)

Third, diagonal communication across departments remained limited and situational, particularly when there were specific data requirements. In fact, diagonal communication has significant potential to strengthen cross-unit coordination.

3.3 Evaluation of Organizational Communication in the Utilization of the e-HRM Application at the Sumatra III River Basin Agency

The evaluation of the communication strategy refers to the assessment of the communication processes accompanying the implementation of the e-HRM application, particularly how the communication strategies used by leaders and system administrators were able to build employee understanding, encourage acceptance of the e-HRM usage policy, and support the use of the application in daily work practices. Therefore, the evaluation of the communication strategy in this study focused on employees' experiences, perceptions, and responses as revealed through field interview findings. Rina Anggia Prawesti stated:

"In general, employees already understand the functions of e-HRM, especially for attendance, personal data, and personnel reports. Although, indeed, some were still confused at the beginning." (Rina Anggia Prawesti, e-HRM Administrator, January 23, 2026)

This statement indicates that the initial communication strategy carried out by the organization successfully conveyed essential information regarding the objectives and functions of e-HRM. Socialization during the early stage of application implementation played an important role in building employees' basic understanding of the newly implemented system.

DISCUSSION

The findings indicate that vertical communication became the dominant communication pattern in the implementation of e-HRM at the Sumatra III River Basin Agency. However, this dominance was not merely a reflection of communication preferences among organizational members; rather, it resulted from several organizational and institutional factors identified in this study. First, the implementation of e-HRM originated from a centralized policy issued by the Ministry of Public Works and Public Housing (PUPR), requiring BWS Sumatra III to implement the system through formal bureaucratic procedures. Consequently, communication relied primarily on hierarchical channels, including official

memoranda, leadership directives, formal meetings, WhatsApp announcements, and technical training. Since the initiative originated from the parent institution rather than from the employees themselves, organizational communication was designed mainly to ensure policy compliance rather than to encourage collaborative participation. This finding explains why vertical communication naturally became the dominant communication flow during e-HRM implementation.

Second, the instructional orientation of the communication strategy further strengthened the dominance of vertical communication. The interview findings revealed that organizational socialization and training focused primarily on explaining how to operate the application rather than why e-HRM was strategically important for improving organizational performance and personnel management. As a result, many employees perceived e-HRM mainly as an administrative obligation instead of an instrument supporting organizational digital transformation. This perception encouraged employees to depend on directives from supervisors instead of taking the initiative to discuss implementation problems, exchange experiences, or actively participate in improving the utilization of the system. Consequently, communication functioned largely as a mechanism for transmitting instructions rather than creating shared understanding and organizational commitment.

These findings are consistent with Pace and Faules (2013), who argue that organizational communication should not merely function as a channel for transmitting messages but should also facilitate coordination, shared meaning, participation, and organizational learning. In the case of BWS Sumatra III, however, communication primarily served administrative control because the organization operated within a hierarchical bureaucratic structure and implemented a centrally mandated digital policy. Therefore, the dominance of vertical communication should not simply be interpreted as a characteristic of bureaucratic organizations, but rather as the consequence of interactions among centralized policy implementation, hierarchical organizational culture, and communication strategies that prioritized procedural compliance over employee engagement. This finding extends previous studies by demonstrating that communication patterns during digital transformation are strongly influenced by institutional arrangements and organizational communication strategies, rather than by technological factors alone.

Although horizontal communication emerged naturally through informal interactions among employees, its contribution remained limited because collaborative communication had not been institutionalized within the organization. Employees generally exchanged information only when colleagues experienced technical difficulties using the application or required assistance in updating personnel data. The absence of formal peer-learning forums, routine knowledge-sharing sessions, or collaborative communication mechanisms meant that horizontal communication functioned only as incidental technical support rather than as part of a systematic organizational communication strategy.

Consequently, valuable experiences gained by individual employees were rarely transformed into collective organizational learning capable of improving overall e-HRM implementation.

Likewise, diagonal communication remained situational because cross-unit interaction generally occurred only when specific personnel information was requested by other divisions. Each organizational unit continued to perform its administrative responsibilities independently, resulting in limited opportunities for routine cross-functional communication. Consequently, diagonal communication was reactive instead of proactive and therefore could not fully support integrated personnel data management. This finding indicates that the limited role of diagonal communication was caused not by technological constraints but by the absence of structured organizational mechanisms encouraging regular coordination across organizational units.

In the context of digital transformation in the public sector, Firlana (2025) also demonstrated that the success of bureaucratic digitalization is not sufficient through system implementation alone, but requires internal communication strategies capable of building change readiness. Horizontal communication that emerges through informal interactions among employees indicates the potential for collective support in the digital adaptation process. Theoretically, horizontal communication plays an important role in strengthening collaboration, experience exchange, and shared learning among employees (Pace & Faules, 2013).

Recent research by Alfaridzah et al. (2025) confirmed that digital transformation in Indonesian public organizations is more effective when supported by a collaborative culture and internal learning, rather than solely through structural instructions. However, because horizontal communication at BWS Sumatra III has not yet been institutionalized within the organizational strategy, its effectiveness remains limited to informal technical assistance and has not developed into a systematic collective mechanism.

Meanwhile, diagonal communication, which remains situational, indicates that cross-unit integration has not been functioning optimally. In modern organizations, diagonal communication plays a strategic role in accelerating coordination, shortening bureaucratic pathways, and increasing the efficiency of cross-functional policy implementation (Pace & Faules, 2013). Jurnalika's study (2023) on Indonesian public organizations showed that weak diagonal communication can hinder policy synchronization and slow the effectiveness of organizational change.

In the context of e-HRM, limitations in diagonal communication have the potential to obstruct personnel data integration, information consistency across units, and the development of a coordinated digital work ecosystem. From an evaluation perspective, the still-administrative approach indicates that the organization is more focused on technical achievements, such as employee data updates, rather than evaluating changes in communication behavior and work culture.

In fact, digital transformation literature emphasizes that sustainable digitalization requires changes in organizational culture, employee engagement, and adaptive governance (Bondarouk et al., 2009; Firlana, 2025). Evaluation that focuses solely on administrative compliance risks reducing e-HRM to merely a procedural digitalization tool without producing substantive organizational transformation.

Therefore, the success of e-HRM implementation at BWS Sumatra III depends not only on technological readiness, but more importantly on the organization's ability to integrate vertical, horizontal, and diagonal communication in a balanced manner. Effective digital transformation demands communication strategies that are no longer merely informative and instructional, but also participatory, persuasive, collaborative, and sustainable. Within this framework, e-HRM should be positioned not only as a digital administrative tool, but also as a strategic instrument to encourage changes in work culture, strengthen organizational adaptation, and support digitally based bureaucratic reform.

4. Conclusion

This study demonstrates that the implementation of Electronic Human Resource Management (e-HRM) at the Sumatra III River Basin Agency represents an important component of digital transformation in public personnel management. However, the findings indicate that successful implementation depends not only on technological readiness but also on the effectiveness of organizational communication strategies. Communication planning was predominantly conducted through top-down policies, socialization, and technical training, while communication implementation remained dominated by vertical communication. Although horizontal communication emerged through informal collaboration among employees and diagonal communication occurred across organizational units, both communication flows remained limited and had not yet become institutionalized as part of the organization's communication strategy. Furthermore, communication evaluation was still administrative in orientation and had not been systematically directed toward strengthening employee engagement, collaborative learning, or organizational culture change.

Theoretically, this study contributes to the development of organizational communication theory by demonstrating that the dominance of vertical communication during digital transformation is not merely a characteristic of bureaucratic organizations. Instead, it results from the interaction between centralized policy implementation, hierarchical organizational culture, instructional communication strategies, and employees' perceptions of digital systems as administrative obligations rather than instruments of organizational transformation. These findings extend the organizational communication framework proposed by Pace and Faules by illustrating how different communication flows influence employee participation during the implementation of digital governance in public organizations.

Practically, this study provides recommendations for managers and human resource administrators in public sector organizations. The findings suggest that communication strategies supporting digital transformation should move beyond one-way dissemination of technical information toward participatory, persuasive, and collaborative communication. Organizations should institutionalize peer-learning forums, routine cross-unit coordination, continuous mentoring, and sustainable communication evaluation to strengthen employee engagement and improve the utilization of digital personnel management systems.

From a policy perspective, the findings imply that government institutions implementing e-HRM or similar digital personnel systems should complement technological policies with communication policies that encourage organizational participation. Ministries and public agencies should develop communication guidelines that integrate vertical, horizontal, and diagonal communication, establish continuous capacity-building programs, and incorporate employee engagement indicators into the evaluation of digital transformation initiatives. Such policy measures would enable digital transformation to generate not only administrative efficiency but also sustainable organizational learning, collaborative work culture, and more effective public sector governance

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