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Digital HRM Capability, HPWS and Service Performance: The Mediating Role of Employee Engagement at PT PELNI, Indonesia

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Abstract: This study examines how Digital HRM capability and high-performance work systems (HPWS) influence employee service performance through employee engagement in Indonesia's state-owned maritime transport context (PT PELNI). A cross-sectional survey of Head Office employees was analysed using PLS-SEM; reliability and validity were assessed, and mediation was tested via bootstrapped indirect effects (5,000 resamples). Digital HRM capability is positively associated with employee engagement, and engagement is strongly associated with employee-level service performance. Engagement mediates the relationship between Digital HRM capability and service performance (indirect-only mediation), indicating that digital HR capability contributes to service outcomes primarily by shaping employee experience. In contrast, HPWS is not significantly related to engagement, and the hypothesised engagement-mediated pathway from HPWS to service performance is not supported. The study contributes by clarifying an employee-experience mechanism linking digital HR capability to service behaviour and extending evidence to an under-researched state-owned maritime service organisation in an emerging-economy context. Keywords: Digital HRM capability; high-performance work systems (HPWS); employee engagement; employee experience; service performance; state-owned enterprise; emerging economy. Article classification: Research paper.

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INTRODUCTION

Large-scale service organisations, including state-owned enterprises (SOEs), face a dual HRM challenge: sustaining consistent service performance while improving operational efficiency under accelerated digitalisation. HR digital transformation is often framed as an administrative solution automating routines, reducing cycle times, and lowering transaction costs. Yet when digitalisation is treated primarily as an IT initiative, it can overlook a core HRM issue: how HR policies and practices shape employee experience and translate into reliable service behaviour at the point of delivery. From a strategic HRM perspective, organisational

advantage is not created by technology per se, but by HR systems that mobilise human resources as productive assets and embed them into organisational routines (Barney, 1991; HUSELID, 1995). For HRM policy and practice, the medium- to long-term value of digital HR transformation therefore depends on whether it strengthens implementation consistency and stabilises employee behaviour in daily service operations.

Accordingly, this study conceptualises Digital HRM capability not as the mere adoption of e-HRM applications, but as an organisational capability to run HR processes in an integrated, transparent, and employee-responsive manner enabling timely access to HR services, clearer procedures, and more consistent HR decision support (Bondarouk & Ruël, 2009; Marler & Fisher, 2013; Strohmeier, 2007). Such capability is particularly consequential in service-intensive settings where frontline work depends on coordination quality, procedural clarity, and perceived support. In parallel, High-Performance Work Systems (HPWS) are positioned as mutually reinforcing HR practices, such as selective staffing, training, performance management, rewards, participation, and empowerment, that operate as a coherent system rather than isolated interventions (Appelbaum, 2000; HUSELID, 1995). In service contexts, however, HPWS matters not only as a formal design, but as an enacted practice that employees consistently experience.

In this paper, service performance is defined as employees' service delivery behaviour reliability, responsiveness, and assurance/empathy enacted in work interactions rather than customer perceptions alone (Parasuraman, 1988). The key mechanism linking HR systems to service performance is employee engagement, understood as an employee experience state in which individuals invest physical, cognitive, and emotional energy into their roles (Kahn, 1990; Schaufeli & Bakker, 2002). Engagement is treated as the pathway through which HR policies and practices become behaviourally meaningful in daily work, sustaining service consistency and discretionary effort (Eshete et al., 2025; Gupta & Jangra, 2024; Karatepe, 2013; Kieserling, 2019).

Despite growing interest in e-HRM and digital HRM, much research has prioritised adoption and efficiency outcomes, with less attention to behavioural service consequences as strategic HRM outcomes in large service organisations (Bindra et al., 2025; Marler & Fisher, 2013; Nastase et al., 2025; Strohmeier, 2007). HPWS research likewise has rarely examined HPWS as complementary to Digital HRM capability within a unified HR system bundle shaping engagement and downstream service behaviour (Appelbaum, 2000; Jiang et al., 2012). Context further sharpens this gap: SOEs in emerging economies, particularly high-contact maritime service environments, remain under-represented in the cumulative HRM evidence base (Cooke et al., 2020). SOE governance constraints (e.g., standardised rules, accountability demands, and multi-layer approvals) can weaken HR implementation strength and create policy–practice gaps at the line-manager enactment level. Under such conditions, HPWS may exist formally yet be experienced inconsistently, whereas digital HR capability may stabilise HR delivery by standardising access and clarifying procedures. This practice-facing lens aligns with SDG 8 (decent work) and SDG 10 (reduced inequalities) insofar as transparent and accessible HR processes can support fairer, more consistent work experiences.

Against this background, the study asks: To what extent do Digital HRM capability and HPWS influence employee service performance through employee engagement in Indonesia's state-owned maritime transport context? The study contributes by advancing an HR system bundle logic linking enabling digital HR capability and HPWS practice content to engagement and service performance, extending evidence to an under-researched SOE setting, and offering implications for HR leaders on aligning digital HR processes and HR practices to sustain consistent service performance.

Theory And Hypotheses Development

Theoretical framing: HR system bundle → employee experience → performance

This study adopts an HRM systems (bundle) perspective, arguing that Digital HRM capability (X1) and High-Performance Work Systems (X2) function as complementary elements of a coherent HR configuration rather than as stand-alone practices (Appelbaum, 2000; HUSELID, 1995; Strohmeier, 2007). Digital HRM capability enables integrated and transparent HR processes, while HPWS provides the developmental and motivational practice content shaping how work is executed (Bondarouk & Ruël, 2009; Mahmoud et al., 2025; Marler & Fisher, 2013; Zervas & Triantari, 2025). Importantly, bundle value is realised through implementation and enactment: HR systems influence outcomes insofar as employees consistently experience them in daily work. Digital HRM capability is therefore theorised as a system integrator that standardises access to HR services, clarifies procedures, improves timeliness and information accuracy, and reduces discretionary variance in HR delivery across units and supervisors. By strengthening implementation strength and process credibility, it can shape employee experience even when practice delivery is uneven. HPWS effects, in contrast, are more contingent: well-designed practices may fail to influence engagement if line-manager delivery is inconsistent, if employees perceive weak follow-through, or if the practice bundle is experienced as symbolic rather than supportive.

The core mechanism is employee engagement (Y) an employee experience state through which HR system resources translate into sustained effort and role investment (Kahn, 1990; Schaufeli et al., 2002; Blau, 1964). The focal outcome is service performance (Z), defined as employees' enacted service delivery behaviour (e.g., reliability, responsiveness, assurance/empathy) rather than customer perceptions alone (Chang et al., 2024; Chaudhary, 2026; Parasuraman, 1988). Boundary conditions are expected in SOE service organisations: governance constraints (e.g., standardised rules, compliance demands, multi-layer approvals) can slow HR responsiveness and weaken implementation strength, while unit-level variation in line-manager enactment can dampen HPWS signals. PT PELNI thus provides a stringent test of whether an enabling digital HR capability and HPWS jointly shape engagement and downstream service behaviour under such constraints.

Construct positioning *D*

Digital HRM capability (X1)

Digital HRM capability refers to the organisation's ability to design and operate HR processes through integrated, digitally enabled systems that provide timely access, procedural clarity, and decision support for employees and managers. Rather than capturing the mere adoption of e-HRM applications, this construct reflects the extent to which digital HR infrastructures are embedded in daily HR operations and experienced by employees as reliable, transparent, and supportive (Bondarouk & Ruël, 2009; Marler & Fisher, 2013). Core facets include the integration of key HR processes (e.g., staffing, performance management, learning, and rewards), self-service functionality that reduces administrative friction, transparency of HR procedures and outcomes, and HR data availability that supports consistent and timely decisions (Alexandro, 2025; Mahmoud et al., 2025; Zervas & Triantari, 2025). In the proposed model, Digital HRM capability functions as an enabling system resource that strengthens HR process coherence and implementation consistency, shaping employee experience and thereby fostering higher engagement and more reliable service performance.

High-Performance Work Systems (HPWS) (X2)

High-Performance Work Systems (HPWS) are defined as a coherent bundle of HR practices designed to enhance employees' ability, motivation, and opportunity (AMO) to contribute effectively at work (Appelbaum, 2000; HUSELID, 1995). From an AMO perspective, HPWS includes practices that build competence (e.g., selective staffing and

training), strengthen motivation (e.g., performance management and performance-contingent rewards), and expand opportunity (e.g., participation, empowerment, and discretion in task execution). These practices are theorised to operate as a mutually reinforcing system rather than as isolated interventions. In the proposed model, HPWS represents the substantive content of the HR system that should shape employees' work experience and behavioural capacity. However, its influence is expected to depend on implementation strength and enactment consistency, particularly at the line-manager level; when delivered coherently, often supported by digitally enabled HR processes, HPWS should foster stronger employee engagement and, through this mechanism, support more consistent service performance (Montañés-Sanchez et al., 2025; Suhail et al., 2025).

Employee engagement (Y)

Employee engagement is defined as a positive, work-related psychological state characterised by high levels of energy, dedication, and cognitive involvement in one's role (Kahn, 1990; Schaufeli & Bakker, 2002). It reflects the extent to which employees invest physical, emotional, and mental resources in their work, resulting in greater focus, persistence, and proactive role investment under demanding conditions. In service settings, engagement is especially consequential because it supports consistent service execution, discretionary effort, and adaptive responses during customer-facing interactions. In this study, engagement is positioned as the central employee experience mechanism through which HR system resources become behaviourally meaningful: when HR processes and practices are perceived as accessible, credible, and supportive, employees are more likely to internalise organisational expectations and reciprocate through sustained effort (Gazi et al., 2025; Kieserling, 2019; Mohammad et al., 2025). Accordingly, engagement links Digital HRM capability and HPWS to downstream service performance by converting HR system inputs into reliable service-oriented behaviour.

Service performance (Z)

Service performance is defined as employees' enacted service delivery behaviour in day-to-day work interactions, reflecting how consistently they deliver reliable, responsive, and assuring/empathic service. The construct captures execution quality at the employee level—what employees actually do during service encounters—rather than customers' overall evaluations of service quality (Jaakkola & Terho, 2021; Jauhari et al., 2024; Parasuraman, 1988). This behavioural focus is critical in high-contact services because service outcomes depend on employees' moment-to-moment reliability, attentiveness, and problem handling under operational constraints. In the proposed model, service performance is the focal outcome through which the behavioural value of the HR system bundle is observed. It captures whether Digital HRM capability and HPWS, primarily through employee engagement, translate into more consistent and effective service delivery. Accordingly, improvements in service performance reflect not only operational execution but also the downstream behavioural consequences of employees' experienced HR support and engagement.

Hypotheses development: direct effects

In this model, Digital HRM capability (X1) and HPWS (X2) are positioned as independent variables, employee engagement (Y) as the mediating mechanism, and service performance (Z) as the dependent outcome. The direct paths reflect the logic that coherent HR system resources shape employees' lived work experience (engagement), which subsequently drives consistent service delivery behaviour. Importantly, the model assumes that employee engagement is sensitive not only to HR system design but also to how consistently HR processes and practices are enacted and experienced in daily work.

H1. *Digital HRM capability (X1) is positively related to employee engagement (Y).*

Digital HRM capability is expected to enhance engagement by improving employees' day-to-day experience of HR delivery. First, integrated and transparent HR processes increase role and procedural clarity, employees can access information, understand procedures, and anticipate HR outcomes, reducing uncertainty that drains work energy and attention (Stachová et al., 2024; Zhou et al., 2025). Second, digitally enabled HR services reduce administrative friction through accessible self-service and more timely responses, which employees may interpret as reliable organisational support, enabling them to focus effort on core tasks rather than navigating HR bottlenecks (Kieserling, 2019; Kisahwan et al., 2025; Rahadi et al., 2025). Accordingly, a stronger Digital HRM capability should be associated with higher engagement.

H2. *HPWS (X2) is positively related to employee engagement (Y).*

HPWS is theorised to foster engagement through AMO mechanisms. Ability- and opportunity-enhancing practices (e.g., selective development, training, feedback, participation, empowerment) strengthen competence and perceived influence at work, supporting psychological investment in one's role (Appelbaum, 2000). Motivation-enhancing practices (e.g., performance management and rewards aligned with contribution) signal that effort is noticed and reciprocated, increasing dedication and willingness to sustain high work energy (HUSELID, 1995; Kieserling, 2019). Because HPWS effects depend on whether practices are enacted consistently, particularly through line-manager delivery, the expected relationship is strongest when employees experience HPWS as credible and coherently implemented rather than symbolic. Thus, HPWS should be positively related to engagement.

H3. *Employee engagement (Y) is positively related to service performance (Z).*

Engaged employees are more likely to deliver consistent service behaviours because engagement provides both energy and role investment. Higher vigour and dedication support persistence and attentional focus, which are essential for reliability and responsiveness under fluctuating service demands (Kahn, 1990; Schaufeli & Bakker, 2002). Moreover, engaged employees are more likely to display proactive assistance and assurance/empathy in service interactions, as they are psychologically present and willing to invest discretionary effort beyond minimum role requirements (Abubakar & Sanda, 2024). Therefore, engagement should be positively associated with service performance.

Hypotheses development: mediated effects

Beyond the direct relationships, this study argues that employee engagement is the key mechanism through which the HR system bundle translates into service-related behavioural outcomes. From an employee experience perspective, both Digital HRM capability and HPWS are expected to influence service performance primarily by shaping how employees experience HR delivery and mobilise energy and commitment in their roles, rather than by exerting purely direct effects on service behaviour.

H4. *Employee engagement (Y) mediates the relationship between Digital HRM capability (X1) and service performance (Z).*

Digital HRM capability is not expected to improve service performance simply because digital tools exist. Its behavioural value depends on whether digitally enabled HR processes are experienced as accessible, clear, and reliable—signals that reduce friction, increase perceived support, and strengthen engagement. Higher engagement then provides the energy and attentional investment required for consistent service execution. Without engagement, Digital HRM capability may remain administrative and fail to translate into frontline service behaviours (Dao et al., 2025; Zhou et al., 2025).

H5. *Employee engagement (Y) mediates the relationship between HPWS (X2) and service performance (Z).*

Similarly, HPWS is theorised to affect service performance through engagement as a motivational and behavioural engine. By enhancing ability (skills and competence), motivation (recognition and performance-contingent rewards), and opportunity (participation and empowerment), HPWS should foster psychological investment that encourages reliable, responsive, and empathetic service behaviours. In the absence of engagement—or when HPWS enactment is weak and employees do not experience the practice bundle as credible—the behavioural benefits of HPWS are likely to be attenuated (Appelbaum, 2000; Ashfan et al., 2026; Farooqi et al., 2025; HUSELID, 1995).

The mediation hypotheses are evaluated using bootstrapped indirect effects, complemented by an examination of the corresponding direct paths in the full model to clarify whether the influence on service performance is primarily transmitted through engagement.

Summary of hypothesised model

Figure 1 summarises the hypothesised model and relationships tested in this study. Digital HRM capability (X1) and HPWS (X2) are specified as the independent variables, employee engagement (Y) as the mediating employee experience mechanism, and service performance (Z) as the focal outcome. The model proposes that Digital HRM capability positively influences employee engagement (H1) and that HPWS positively influences employee engagement (H2). Employee engagement is then expected to positively influence service performance (H3). In addition, engagement is hypothesised to mediate the effects of Digital HRM capability (H4) and HPWS (H5) on service performance. Overall, the model reflects an HR system bundle logic in which enabling digital HR capability and HR practice content jointly shape service-related behavioural outcomes primarily through employee engagement.

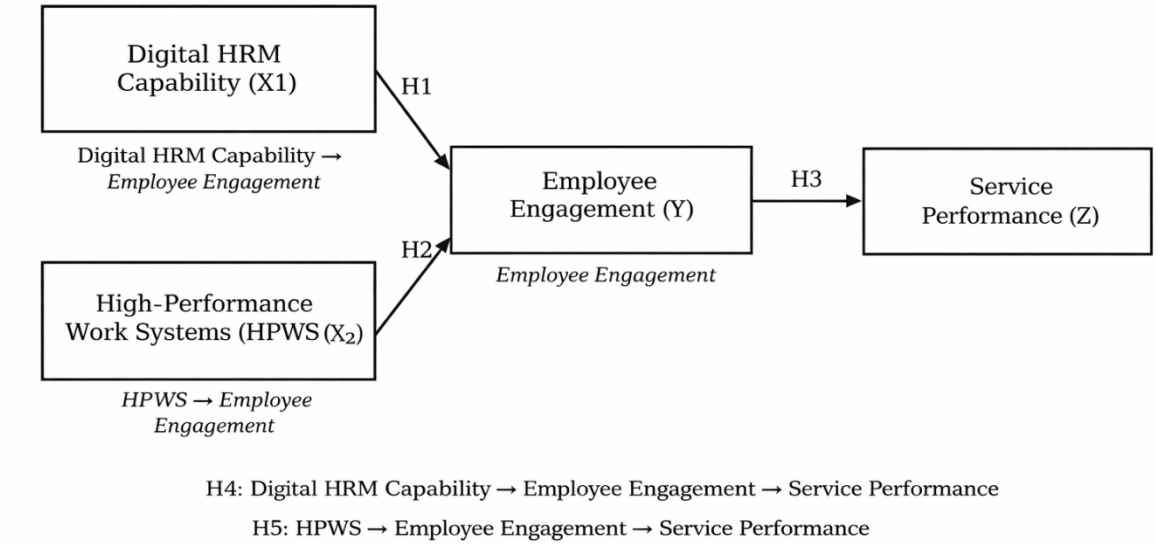

Figure 1. Conceptual framework: Digital HRM capability and HPWS as an HR system bundle shaping service performance via employee engagement.

Caption: Digital HRM capability (X1) and HPWS (X2) are proposed to enhance employee engagement (Y), which subsequently improves employee service performance (Z); engagement mediates the effects of X1 and X2 on Z (H1–H5).

METHOD

Research design and setting

This study employed a cross-sectional survey design to test the hypothesised relationships among Digital HRM capability, High-Performance Work Systems (HPWS), employee engagement, and service performance. A survey approach is appropriate because the focal mechanism—employee engagement—captures employees' lived experience of HR system delivery and its behavioural implications in daily work. Data were collected from employees of PT PELNI, Indonesia's state-owned maritime transport provider, which offers a theoretically informative setting for examining HRM systems in a large, public-facing service organisation. The maritime service context involves high-contact service encounters and strong coordination demands, where service consistency depends on employees' behavioural execution under variable operational conditions. As an SOE in an emerging economy, PT PELNI also operates under governance constraints and public service expectations that shape how HR policies are implemented and experienced (Jebbari, 2023; Phinaitrup, 2026).

Sample and data collection

The study population comprised all employees of PT Pelayaran Nasional Indonesia (Persero) (PT PELNI). Based on the most recent official workforce report, PT PELNI employed 4,533 staff. To align the unit of analysis with HR policy formulation and organisational decision-making, data collection focused on employees at the Jakarta Head Office as the organisation's central administrative and HR governance unit. Using a conservative sample size to support structural model estimation, data were collected from 277 Head Office employees. Data were gathered via an anonymous structured questionnaire distributed through internal coordination using an online format (with paper copies provided when needed to improve access). Participation was voluntary, responses were confidential, and results were reported only in aggregate; no personally identifying information was requested. Prior to analysis, the dataset was screened for completeness and response quality; cases with substantial missing data were removed and minor missing values were handled using an appropriate procedure consistent with the SEM approach (Wah, 2025).

Measures

All constructs were measured using previously validated scales adapted to the PT PELNI context and assessed on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Each construct was operationalised using five indicators to ensure adequate content coverage while maintaining parsimony. **Table 1** summarises the study variables, measurement codes, number of indicators, indicator domains, and original scale sources. To keep the manuscript concise, only indicator domains and brief examples are reported; full item wording can be provided in an online appendix if required. To mitigate common method bias in this self-reported survey, the questionnaire was administered anonymously, participation was voluntary, no personally identifying information was collected, and results were reported only in aggregate form.

Table 1. Measurement of study variables

Variable	Code	Number of indicators	Indicator domains (summary)	Source (adapted from)
Digital HRM capability	X1	5	HR process integration; HR self-service accessibility; transparency of HR procedures; timeliness and accuracy of HR information; HR data support for decision-making	(Bondarouk & Ruël, 2009; Marler & Fisher, 2013; Strohmeier, 2007)
High-Performance	X2	5	Ability-enhancing practices (training/skill development); selective staffing;	(Appelbaum, 2000; HUSELID, 1995)

Variable	Code	Number of indicators	Indicator domains (summary)	Source (adapted from)
Work Systems (HPWS)			performance-based rewards; employee participation; empowerment and autonomy	
Employee Engagement	Y	5	Work energy/vigour; dedication to work; enthusiasm; cognitive focus; willingness to invest extra effort	(Kahn, 1990; Schaufeli & Bakker, 2002)
Service Performance	Z	5	Service reliability; responsiveness to service needs; assurance/competence in service delivery; empathy and courtesy; effectiveness in handling service problems	(Parasuraman, 1988)

Analytical strategy

The hypotheses were tested using partial least squares structural equation modelling (PLS-SEM). Measurement quality was assessed prior to hypothesis testing by examining indicator reliability, internal consistency, and construct validity. Reliability was evaluated using composite reliability, convergent validity through average variance extracted (AVE), and discriminant validity using the heterotrait–monotrait ratio (HTMT). To reduce common method bias in this self-reported survey, anonymity and voluntary participation were emphasised procedurally, and a full collinearity assessment (VIF) was applied as a conservative statistical diagnostic (Islam et al., 2025). After establishing an acceptable measurement model, the structural model was estimated to test direct effects (H1–H3). Mediation (H4–H5) was assessed via bootstrapping with 5,000 resamples to estimate indirect effects and confidence intervals. Effect sizes were also examined to support substantive interpretation (Alfons & Schley, 2025; Hanimoğlu, 2025).

RESULTS AND DISCUSSION

Descriptive statistics

Table 2 reports item-level descriptive statistics for the study variables (N = 277). Across indicators, mean scores were generally above the midpoint, suggesting moderately positive perceptions among PT PELNI Head Office employees. Digital HRM capability items ranged from 3.73 to 4.08 (SD ≈ 0.70–0.74), while HPWS items ranged from 3.79 to 4.02 (SD ≈ 0.60–0.69). Employee engagement items showed means between 3.67 and 3.85 (SD ≈ 0.64–0.79), and service performance items ranged from 3.50 to 3.93 (SD ≈ 0.75–0.89). The observed values covered the full response scale (1–5 for most items), indicating sufficient variability for subsequent model estimation.

Measurement Model

Figure 2 presents the measurement (outer) model with standardised indicator loadings for each construct. The figure shows that all indicators load strongly on their intended latent variables, supporting the adequacy of the reflective measurement specification.

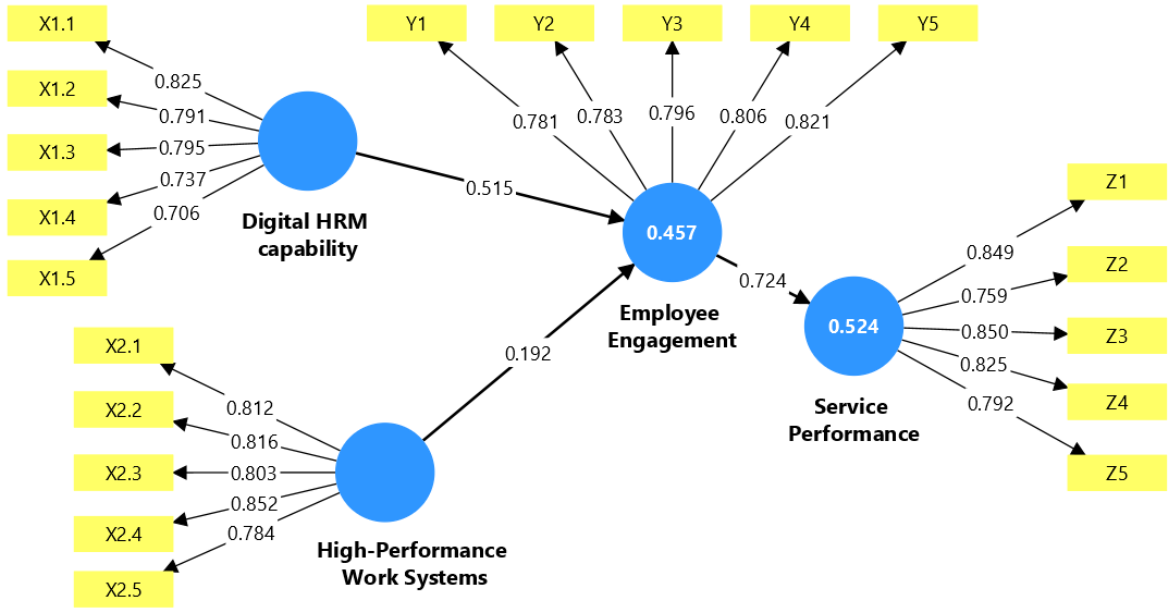

Figure 2. Outer (measurement) model with standardised indicator loadings.

Caption: Standardised outer loadings for Digital HRM capability (X1), HPWS (X2), employee engagement (Y), and service performance (Z).

As reported in **Table 2**, indicator reliability and internal consistency were satisfactory. All outer loadings met recommended thresholds (range = 0.706–0.852). Construct reliability was also acceptable (Cronbach's α = 0.832–0.874; composite reliability ρc = 0.880–0.909), and convergent validity was supported because AVE exceeded 0.50 for all constructs (AVE = 0.596–0.666).

Table 2. Indicator loadings and construct reliability
Panel A. Outer loadings

Indicator	Digital HRM capability	HPWS	Employee engagement	Service performance
X1.1	0.825			
X1.2	0.791			
X1.3	0.795			
X1.4	0.737			
X1.5	0.706			
X2.1		0.812		
X2.2		0.816		
X2.3		0.803		
X2.4		0.852		
X2.5		0.784		
Y1			0.781	
Y2			0.783	
Y3			0.796	
Y4			0.806	
Y5			0.821	
Z1				0.849

Indicator	Digital HRM capability	HPWS	Employee engagement	Service performance
Z2				0.759
Z3				0.850
Z4				0.825
Z5				0.792

Panel B. Construct reliability and convergent validity

Construct	Cronbach's α	ρa	ρc	AVE
Digital HRM capability	0.832	0.846	0.880	0.596
HPWS	0.873	0.876	0.907	0.662
Employee engagement	0.857	0.858	0.897	0.636
Service performance	0.874	0.879	0.909	0.666

Notes: All outer loadings ≥ 0.70. Cronbach's α and composite reliability (ρc) exceed recommended thresholds, and AVE > 0.50 indicates adequate convergent validity.

Discriminant validity was assessed using the heterotrait–monotrait ratio (HTMT) with bootstrapped confidence intervals (5,000 resamples; **Table 3**). Most HTMT ratios were below conventional cut-offs and their 95% confidence interval upper bounds remained below 1.00, supporting discriminant validity for the majority of construct pairs. However, the HTMT between Digital HRM capability and HPWS was comparatively high (HTMT = 0.940), and the bootstrapped 95% CI marginally exceeded the 1.00 criterion (LL = 0.855; UL = 1.013), indicating very close empirical proximity between these two constructs. This pattern is theoretically plausible in an HR system bundle perspective because Digital HRM capability represents a technology-enabled enabling infrastructure (e.g., HR process integration and information transparency), whereas HPWS represents the content of AMO-based HR practices (e.g., training, selective staffing, performance-based rewards, participation, and empowerment). In the PT PELNI context, these enabling and practice elements may be experienced by employees as tightly coupled aspects of a single integrated HR system. To further interrogate discriminant validity, we therefore triangulated the HTMT evidence with additional diagnostics (Fornell–Larcker criterion and indicator cross-loadings; see **Appendix A, Table A1–A2**).

While most indicators loaded highest on their intended constructs, two Digital HRM capability indicators (X1.4–X1.5) exhibited higher cross-loadings on HPWS, reinforcing the interpretation that enabling digital HR infrastructure and AMO-based HR practices are tightly coupled in this organisational setting. Taken together, the results suggest that while Digital HRM capability and HPWS are closely related in this context, they remain conceptually and operationally separable for the purposes of hypothesis testing, and the structural model estimates should be interpreted as reflecting complementary (rather than orthogonal) components of the broader HR system.

Table 3. Discriminant validity (HTMT and HTMT inference; 5,000 bootstrap subsamples)

Construct pair	HTMT (O)	95% CI (LL)	95% CI (UL)
Employee engagement ↔ Digital HRM capability	0.767	0.645	0.880
HPWS ↔ Digital HRM capability	0.940	0.855	1.013
HPWS ↔ Employee engagement	0.682	0.529	0.825
Service performance ↔ Digital HRM capability	0.665	0.512	0.815
Service performance ↔ Employee engagement	0.828	0.705	0.927
Service performance ↔ HPWS	0.597	0.406	0.798

Notes: HTMT inference is evaluated using the bootstrapped confidence interval; discriminant validity is supported when the upper bound of the 95% CI is below 1.00. Results are reported as Original sample (O) and 95% CI (LL–UL).

Model fit statistics are reported in **Table 4**. The SRMR values (saturated = 0.096; estimated = 0.100) were within acceptable ranges for PLS-SEM reporting, supporting the adequacy of the model representation. Given that PLS-SEM is primarily prediction-oriented, these global fit indices are reported transparently as diagnostics rather than as primary model acceptance criteria; SRMR, d_ULS, and d_G are therefore interpreted as complementary evidence of model adequacy. As an additional diagnostic for common method bias, full collinearity VIF values were below conservative thresholds (maximum VIF = 3.443), suggesting CMV is unlikely to materially bias the estimates. To further strengthen the CMV assessment for this self-reported, single-wave survey, we additionally conducted a single-factor diagnostic (Harman's single-factor test) and report the result in Appendix A; the pattern of results indicates that a single general factor does not account for the majority of covariance among the measures.

Table 4. Model fit indices

Fit index	Saturated model	Estimated model
SRMR	0.096	0.100
d_ULS	1.924	2.082
d_G	1.025	1.033
Chi-square	514.900	516.582
NFI	0.658	0.657

Caption: Global model fit metrics reported by SmartPLS.

Structural model: hypothesis tests

Figure 3 presents the structural model results, including standardised path coefficients and explained variance. Digital HRM capability showed a positive and significant association with employee engagement (H1 supported; $\beta = 0.515$, $t = 3.785$, $p < 0.001$). In contrast, HPWS was not significantly related to employee engagement (H2 not supported; $\beta = 0.192$, $t = 1.321$, $p = 0.187$). Employee engagement was strongly and positively associated with service performance (H3 supported; $\beta = 0.724$, $t = 13.451$, $p < 0.001$). **Table 5** summarises the direct-effect hypothesis testing results (H1–H3).

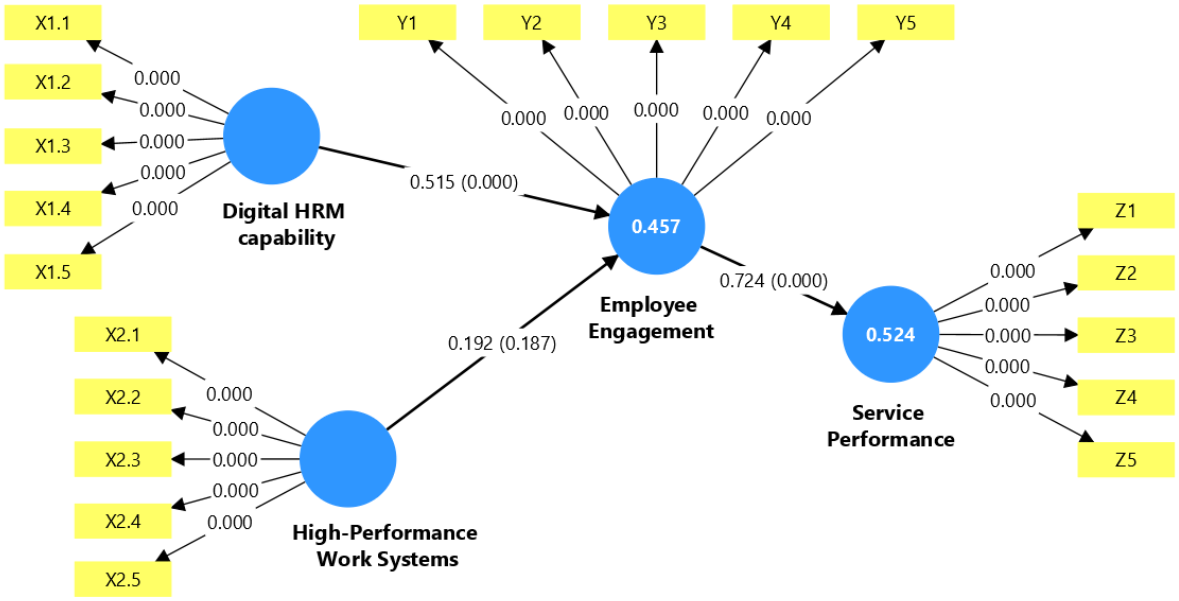

Figure 3. Structural model results (standardised path coefficients).
Caption: Standardised direct effects for H1–H3 with R^2 values for endogenous constructs.

The model explained a substantial proportion of variance in the endogenous constructs. Digital HRM capability and HPWS jointly explained 45.7% of the variance in employee engagement ($R^2 = 0.457$, adjusted $R^2 = 0.446$). Employee engagement explained 52.4% of the variance in service performance ($R^2 = 0.524$, adjusted $R^2 = 0.519$). Effect size estimates (f^2) indicated a meaningful contribution of Digital HRM capability to employee engagement ($f^2 = 0.189$) and a very strong contribution of employee engagement to service performance ($f^2 = 1.099$), while the effect of HPWS on engagement was small ($f^2 = 0.026$). Notably, the non-significant HPWS → engagement path should be interpreted in light of the close coupling between enabling digital HR infrastructure (Digital HRM capability) and AMO-based HR practice content (HPWS) observed in the discriminant validity diagnostics. In this organisational setting, employee engagement appears to be more strongly shaped by the capability-driven integration, accessibility, and transparency of HR processes than by the presence of HPWS practices per se, suggesting an enactment/experience boundary condition in which HR practices may not translate into engagement unless they are consistently delivered and experienced as credible and implementable.

Table 5. Hypothesis testing results (direct effects).

Hypothesis	Path	β (O)	t-value	p-value	Decision
H1	Digital HRM capability → Employee engagement	0.515	3.785	0.000	Supported
H2	HPWS → Employee engagement	0.192	1.321	0.187	Not supported
H3	Employee engagement → Service performance	0.724	13.451	0.000	Supported

To facilitate the interpretation of the mediation tests reported in Section 4.4, the direct effects of Digital HRM capability and HPWS on service performance in the full structural model are reported in **Table 6**.

Table 6. Direct effects on service performance in the full model (diagnostic for mediation interpretation)

Path (full model)	β (O)	p-value	Decision
Digital HRM capability → Service performance	0.128	0.288	Not significant
HPWS → Service performance	0.086	0.525	Not significant

Note: These direct effects are reported as a diagnostic to support the mediation interpretation in Section 4.4 and do not represent additional hypotheses beyond H1–H5.

As shown in **Table 6**, neither Digital HRM capability nor HPWS exhibited a statistically significant direct association with service performance in the presence of employee engagement, reinforcing the central role of engagement as the proximal predictor of service performance in the full model.

Mediation results

Mediation was assessed using bootstrapped indirect effects to test whether employee engagement transmits the effects of Digital HRM capability and HPWS to service performance. **Table 7** reports the indirect effect estimates and their significance. The indirect effect of Digital HRM capability on service performance through employee engagement was positive and significant (H4 supported; $\beta = 0.373$, $t = 3.454$, $p = 0.001$). Consistent with this pattern, the direct effect of Digital HRM capability on service performance was non-significant when employee engagement was included as a mediator (see **Table 7**), indicating an indirect-only mediation pattern in which the effect is transmitted primarily through engagement. In contrast, the indirect effect of HPWS on service performance through engagement was not significant (H5 not supported; $\beta = 0.139$, $t = 1.314$, $p = 0.189$), indicating that the proposed mediated pathway for HPWS was not empirically supported.

Table 7. Mediation (indirect effects) results.

Hypothesis	Indirect path	β (O)	t-value	p-value	Decision
H4	Digital HRM capability → Employee engagement → Service performance	0.373	3.454	0.001	Supported
H5	HPWS → Employee engagement → Service performance	0.139	1.314	0.189	Not supported

Discussion

Summary of key findings

This study examined how Digital HRM capability and HPWS relate to employee service performance through employee engagement in PT PELNI's Head Office context. The results show that Digital HRM capability is positively associated with employee engagement, and engagement, in turn, is strongly associated with service performance, supporting the proposed employee experience pathway. Mediation tests further indicate that the effect of Digital HRM capability on service performance is transmitted primarily through engagement (indirect-only mediation), highlighting engagement as the central mechanism linking digital HR system delivery to service behaviour. In contrast, HPWS did not exhibit a significant relationship with engagement, and its indirect effect on service performance via engagement was not supported; the direct effect of HPWS on service performance in the full model was also non-significant. Collectively, the findings suggest that in this under-researched SOE service setting, digitally enabled HR capability appears more consequential for engagement-driven service performance than employees' perceptions of HPWS practice bundles, underscoring the importance of HR implementation and "experienced HR" in explaining behavioural service outcomes.

Theoretical implications for HRM

What we learned about digital HR capability as HR policy infrastructure

First, the findings refine HR system bundle logic by showing that "bundling" is not merely a conceptual assumption but an empirical contingency. Although Digital HRM capability and HPWS were theorised as complementary elements of a coherent HR system, only Digital HRM capability demonstrated a robust association with the employee experience mechanism (engagement). This suggests that, in large service organisations, the digital capability component of the HR system may function as a more salient and immediately experienced HR policy infrastructure—a system-level integrator that enhances process clarity, transparency, and reduces administrative friction. In other words, employees may experience Digital HRM capability as the "visible" and actionable face of HR policy delivery, whereas formal practice bundles become consequential only when their delivery is consistently enacted and perceived as credible.

Why HPWS may not become 'experienced HR' in SOEs

Second, the non-significant HPWS → engagement relationship indicates that HPWS may not automatically translate into "experienced HR" in SOE contexts. A plausible theoretical explanation is that HPWS is more dependent on implementation strength and line-manager enactment, while SOE governance constraints (e.g., standardisation, compliance requirements, multi-layer approvals) can weaken practice consistency across units. Under such conditions, HPWS may exist as formal policy design but be experienced by employees as uneven, symbolic, or weakly consequential—thereby attenuating its motivational meaning for engagement. This interpretation aligns with an enactment-based view of HR systems: HR practices generate employee experience effects when employees perceive coherent delivery, credible follow-through, and consistent linkage between contribution and outcomes, rather than when practices are merely present in policy.

What this means for HRM systems/bundles theory: boundary conditions

Third, these results extend HRM systems theory by highlighting boundary conditions under which complementarities within HR configurations may be asymmetric at the employee-experience level. Complementarities may exist in design (digital capability as enabling infrastructure; HPWS as practice content), yet their behavioural relevance depends on which element is consistently experienced and interpreted as reliable support. Specifically, the results imply that in complex, public-facing service settings, a system integrator (Digital HRM capability) may play a primary role in shaping engagement, while HPWS effects may require additional enabling conditions—such as stronger local enactment, managerial implementation capacity, and a supportive service climate—to become experience-relevant and behaviourally effective. This moves HR bundle theory from a "bundle-as-structure" view toward a "bundle-as-enacted system" view, where employee experience becomes the critical lens for understanding when and why HR configurations translate into performance.

Medium–long-term impact: why this matters for HRM policy and practice development. Beyond immediate associations, the findings point to a medium- to long-term HRM policy implication: Digital HRM capability can shape the consistency of HR decisions and employee perceptions of fairness and transparency by standardising access to information, procedures, and HR services. Over time, such consistency can stabilise engagement by reducing uncertainty and perceived arbitrariness in HR delivery, strengthening trust in HR processes, and reinforcing predictable service routines in large organisations. In service settings where performance depends on sustained behavioural reliability rather than episodic effort, this suggests that digital HR capability may contribute to performance not primarily through direct control, but through institutionalising fairer and more transparent HR process infrastructure that supports stable employee experience and, consequently, more consistent service execution.

Practical and policy implications

For HR leaders in large service organisations, the findings suggest that Digital HRM capability should be prioritised as an employee-experience infrastructure rather than treated as an automation tool. First, digitally enabled HR processes should be designed to strengthen implementation consistency by integrating key HR cycles—goal-setting, coaching/feedback, learning access, and performance review—into a coherent employee journey visible to both employees and line managers. Second, digital HR governance should be enhanced to protect engagement: HR decisions and procedures should be transparent, rule-based, auditable, and communicated consistently, supported by responsive HR service channels. These features reduce procedural ambiguity, strengthen perceived fairness, and build trust in HR delivery—critical in public-facing service work. Third, HPWS should be repositioned as a targeted service-performance intervention rather than a generic "best practice" package. HR leaders should emphasise service-relevant training, empowerment for rapid service recovery, and rewards explicitly aligned with service KPIs (e.g., reliability, responsiveness). Where HPWS fails to translate into engagement, the priority is enactment quality—especially line-manager delivery and credible follow-through of development and reward promises.

Limitations And Future Research

This study has several limitations that also open a clear agenda for future research. First, the cross-sectional design restricts causal inference and does not capture how Digital HRM capability, engagement, and service performance evolve over time. Longitudinal designs could test dynamic effects and assess whether engagement remains a stable transmission mechanism as digital HR systems mature and HR routines stabilise. Second, the study relied on self-reported measures, which may inflate associations due to common method influences. Future work should adopt multi-source designs, combining employee surveys with supervisor ratings, administrative HR records, and customer/service metrics (e.g., service recovery rates, complaint handling, response times) to validate service performance behaviourally and reduce single-source bias. Third, although the model theorised a coherent HR system bundle, complementarity may depend on implementation conditions not captured here. Future studies should explicitly test HR implementation strength and line-manager HR delivery/enactment quality as moderators of the HPWS → engagement relationship, clarifying when HPWS becomes "experienced HR" in SOE settings. Relatedly, configurational approaches (e.g., profiles of digital HR capability × HPWS enactment) could identify bundles that are sufficient for high engagement and service performance. Finally, generalisability is bounded by the PT PELNI Head Office setting; replication across other SOEs and service industries would help establish boundary conditions for HR system effectiveness in emerging-economy contexts.

CONCLUSION

This study advances HRM research by showing that, in an under-researched Indonesian SOE service context, Digital HRM capability is associated with stronger employee service performance primarily through employee experience—specifically, through higher employee engagement. The findings suggest that digital HR systems generate performance value not merely via administrative efficiency, but through the extent to which HR delivery is experienced as clear, accessible, and reliable, thereby mobilising employees' energy and role investment in service interactions. In contrast, the hypothesised engagement pathway for HPWS was not supported in this setting, indicating that the behavioural relevance of high-performance practices may depend on implementation strength and enactment quality—particularly the consistency of line-manager delivery and the credibility of practice signals. For HRM systems theory, the study highlights engagement as a key transmission mechanism through which HR policy becomes enacted service behaviour and underscores boundary conditions under which "bundles" become experienced by employees. For policy and practice

development, the implication is pragmatic: organisations should build coherent digital HR capabilities as HR policy infrastructure and align HR practice content around service-critical outcomes, while strengthening enactment and governance so that HR systems consistently translate into dependable service routines.

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Appendix Table A1. Fornell–Larcker criterion

	Digital HRM capability	Employee engagement	HPWS	Service performance
Digital HRM capability	**0.772**			
Employee engagement	0.666	**0.797**		
HPWS	0.784	0.596	**0.814**	
Service performance	0.579	0.724	0.531	**0.816**

Notes: Diagonal elements (bold) are the square roots of AVE. Off-diagonal elements are latent construct correlations. Discriminant validity is supported when the square root of AVE for each construct exceeds its correlations with other constructs.

Table A2. Indicator cross-loadings

Indicator	Digital HRM capability	Employee engagement	High-Performance Work Systems	Service performance
X1.1	0.825	0.571	0.528	0.428
X1.2	0.791	0.615	0.530	0.477
X1.3	0.795	0.491	0.613	0.427
X1.4	0.737	0.462	0.764	0.476
X1.5	0.706	0.376	0.665	0.433
X2.1	0.622	0.420	0.812	0.459
X2.2	0.683	0.513	0.816	0.469
X2.3	0.628	0.532	0.803	0.437
X2.4	0.607	0.492	0.852	0.363
X2.5	0.647	0.448	0.784	0.434
Y1	0.459	0.781	0.441	0.561
Y2	0.542	0.783	0.491	0.577
Y3	0.595	0.796	0.554	0.547
Y4	0.554	0.806	0.462	0.604
Y5	0.495	0.821	0.421	0.595
Z1	0.350	0.577	0.308	0.849
Z2	0.321	0.522	0.326	0.759
Z3	0.438	0.529	0.419	0.850
Z4	0.619	0.675	0.554	0.825
Z5	0.581	0.618	0.519	0.792

Notes: For most indicators, the highest loading occurs on the intended construct, providing supplementary support for discriminant validity. Two indicators of Digital HRM capability (X1.4 and X1.5) show higher loadings on HPWS than on Digital HRM capability, suggesting strong empirical proximity between the enabling capability and HR practice bundle in this context. This pattern is consistent with the HTMT inference result for the Digital HRM capability–HPWS pair (Table III) and indicates that these constructs may be experienced as tightly coupled elements of an integrated HR system.