



Associations of Digital HR Development and Learning Agility with Employee Performance in Indonesian Organizations Using Digital HR Systems

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A B S T R A C T

Digital transformation has increased organizations' reliance on technology-enabled human resource development while simultaneously requiring employees to learn and adapt rapidly to changing work demands. However, the combined associations of organizational digital HR development practices and employees' learning agility with employee performance remain insufficiently examined within a single analytical model. This study examined the associations of Digital HR Development and Learning Agility with Employee Performance among employees of Indonesian organizations using digital HR systems. A quantitative, associative, non-experimental design was employed. Using purposive sampling, data were collected through a structured five-point Likert-scale questionnaire from 150 employees working in government, educational, and private-sector organizations who met the study's eligibility criteria. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The measurement model demonstrated satisfactory convergent validity, discriminant validity, and internal consistency reliability. Structural-model analysis showed that Digital HR Development was positively associated with Employee Performance ($\beta = 0.358$, $t = 4.712$, $p < .001$), while Learning Agility also showed a positive association with Employee Performance ($\beta = 0.472$, $t = 6.283$, $p < .001$). Together, the two predictors explained 62.4% of the variance in Employee Performance ($R^2 = 0.624$). The findings provide joint empirical evidence that organizational digital development practices and individual adaptive learning capacity are simultaneously relevant to employee performance. Practically, organizations using digital HR systems may benefit from integrating technology-enabled employee development with initiatives that strengthen employees' capacity to learn and adapt.

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1. Introduction

Digital transformation has substantially reshaped human resource management by expanding the use of digital technologies across recruitment, performance management, employee development, learning, analytics, and other HR functions. Digital HRM is increasingly understood not merely as the automation of conventional HR processes but as a broader transformation in how organizations design and deliver HR practices through digital technologies (Strohmeier, 2020). Evidence from the e-HRM literature further indicates that technology-enabled HR systems are associated with organizational performance, although their effectiveness depends on technological, organizational, and human factors (Zhou et al., 2022). Within this broader transformation, employee development has become particularly important because organizations must continually build capabilities that enable employees to work effectively in technology-intensive and rapidly changing environments.

Human resource development is therefore increasingly intertwined with digital transformation. Digital technologies allow organizations to provide learning resources,



training platforms, HR information systems, analytics, and technology-enabled development opportunities that may strengthen employee competencies and support work performance. Recent empirical evidence from ICT organizations shows that HRM and HRD are closely connected with digital transformation and job-performance outcomes, suggesting that employee development remains an important mechanism through which organizations respond to digitally changing work environments (Lou et al., 2024). Research on digital-HRM has likewise begun to demonstrate employee-level consequences; Hu and Lan (2024), for example, found that digital-HRM was associated with employee innovative performance through employee-level psychological mechanisms. These studies reinforce the need to examine digitally enabled HR development not only as a technological system but also as an organizational resource experienced by employees.

Building on this literature, the present study uses Digital HR Development to refer specifically to employees' perceptions of organization-provided digital technologies and practices used to facilitate training, learning, and capability development. In this sense, Digital HR Development represents the developmental dimension of digital HRM rather than the entire digital HR architecture. However, access to digitally enabled development opportunities alone may not be sufficient to explain employee performance. Employees also differ in their capacity to learn from experience, adapt to unfamiliar conditions, and apply newly acquired knowledge to changing work situations. This individual capability is captured by the concept of Learning Agility, which refers broadly to the willingness and ability to learn from experience and to apply that learning effectively in new or changing circumstances (DeRue, 2012). Learning Agility is particularly relevant in digitally dynamic workplaces because employees are repeatedly required to respond to new technologies, work processes, and organizational expectations.

Previous research provides support for the relevance of both organizational learning resources and individual learning agility, but these streams have often developed separately. Digital-HRM and e-HRM studies have primarily focused on technology adoption, HR effectiveness, organizational outcomes, or specific employee behaviors (Zhou et al., 2022; Hu & Lan, 2024), whereas Learning Agility research has emphasized employees' ability to adapt, learn, and contribute to performance under dynamic conditions. Tripathi (2024), for example, found that Learning Agility played an important role in linking organizational learning culture with performance in the Indian IT sector. More recent research has moved closer to integrating the two domains: Shatila (2026) showed that digital reskilling was associated with job performance and that perceived Learning Agility operated as one of the mechanisms through which digital reskilling translated into performance outcomes.

These developments suggest that the relationship between organizational digital development practices, employee learning capability, and performance is more integrated than earlier fragmented research implied. Nevertheless, an important analytical question remains insufficiently addressed. Existing studies commonly examine digital HR practices and Learning Agility either in separate research streams or position Learning Agility as a mediating mechanism between organizational learning inputs and performance outcomes. Less attention has been given to whether employees' perceptions of Digital HR Development and their individual Learning Agility each retain an independent association with Employee Performance when estimated simultaneously as parallel predictors within the same model. This distinction is theoretically important because the two constructs represent different but

potentially complementary resources: Digital HR Development reflects development opportunities provided through organizational systems, whereas Learning Agility reflects an individual employee's adaptive learning capability. The present study therefore does not assume that one construct mediates or moderates the other.

Examining these two predictors simultaneously also provides a more cautious basis for understanding performance in digitally enabled work settings. Rather than assuming that digital HR technologies automatically improve performance, the proposed model recognizes that organizational development resources and employees' capacity to learn may each contribute distinctive explanatory information. This perspective is consistent with evidence showing that digitally enabled HR systems can be associated with performance outcomes while also requiring employees to possess the capabilities necessary to engage with new technologies and changing work practices (Zhou et al., 2022; Lou et al., 2024). At the same time, the model remains associative rather than causal because both Digital HR Development and Learning Agility are examined using employee-reported, cross-sectional data.

Accordingly, this study aims to examine the associations of Digital HR Development and Learning Agility with Employee Performance, both individually and jointly, among employees of Indonesian organizations using digital HR systems. The study contributes to the digital HRM and employee-development literature by placing an employee-perceived organizational development practice and an individual adaptive-learning capability within a single analytical model. This approach enables their respective associations with Employee Performance to be examined simultaneously without assuming causal ordering between them. Practically, the study may provide evidence for organizations seeking to combine digitally enabled employee-development practices with initiatives that strengthen employees' capacity to learn and adapt in changing work environments.

2. Method

2.1. Research Design

This study employed a quantitative, cross-sectional, non-experimental correlational design to examine the associations of Digital HR Development and Learning Agility with Employee Performance. The unit of analysis was the individual employee. All three constructs were measured at the respondent level; therefore, Digital HR Development represents employees' perceptions of digitally enabled development practices provided by their organizations rather than an objective organization-level measure.

The study did not involve random assignment, experimental manipulation, or temporal intervention. Accordingly, the estimated structural paths were interpreted as statistical associations rather than causal effects. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to estimate the proposed relationships simultaneously within a latent-variable model (Hair et al., 2019, 2022)

2.2. Research Location and Time

The study involved employees working in Indonesian organizations that had implemented digital technologies in human resource management and employee development. The participating organizational contexts included government institutions, educational institutions, and private-sector organizations. This multi-sector setting was considered appropriate because the study focused on employees who routinely interacted

with digitally enabled HR and work systems rather than on a single occupational or industrial sector.

Survey data collection was conducted over approximately three months. Data collection involved distributing the questionnaire to eligible respondents and receiving completed responses. Data preparation and statistical analysis were undertaken after the survey data had been collected

2.3. Data Sources

The empirical analysis was based on primary survey data collected directly from individual employees through a structured questionnaire. The questionnaire captured respondents' perceptions of Digital HR Development, their Learning Agility, and their self-reported Employee Performance.

Scientific articles, books, and other scholarly publications were used to establish the conceptual foundations, operational definitions, and research hypotheses; however, these sources were not treated as a separate secondary dataset in the statistical analysis. This distinction is important because all empirical estimates reported in the study were derived from the primary respondent-level dataset

2.4. Population and Sample

The target population consisted of employees working in organizations that had adopted digital technologies for HR management, employee development, or digitally enabled work activities. Because the population could not be enumerated precisely and access to eligible employees was restricted, the study employed non-probability purposive sampling.

Respondents were eligible to participate when they met all of the following criteria: (1) they had at least one year of work experience; (2) they had previously participated in digital-based training or employee-development activities; and (3) they actively used digital systems in their routine work activities. These criteria were intended to ensure that respondents had sufficient direct experience with the digital work and HR-development environment examined in the study.

The final analytical sample comprised 150 employees. The structural model was relatively parsimonious, consisting of two exogenous constructs, one endogenous construct, and 12 observed indicators. The sample was therefore considered adequate for estimation of the specified PLS-SEM model in relation to its structural complexity and contemporary PLS-SEM guidance (Hair et al., 2022). Rather than relying solely on a fixed indicator-based rule, sample adequacy in PLS-SEM should be considered in relation to model complexity and statistical requirements (Kock & Hadaya, 2018).

Respondent characteristics, including gender, age, educational attainment, and length of service, are reported in the Results section

2.5. Research Instrument

Data were collected using a structured questionnaire containing 12 construct indicators, with four indicators assigned to each latent variable. All items were measured using a five-point Likert response format ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

Table 1. Likert Scale Used in the Questionnaire

Scale	Description
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Digital HR Development was operationalized through indicators representing the availability of digital learning platforms, the use of HR technologies, accessibility to digital training programs, and the perceived effectiveness of digital learning. Because the construct was measured through respondents' perceptions, the indicators represent employee-perceived digital HR development practices.

Learning Agility was operationalized through four domains: Mental Agility, People Agility, Change Agility, and Results Agility. These domains are consistent with the four-dimensional Learning Agility structure validated in an Indonesian employee context by Wardhani et al. (2022). The corresponding indicators reflected critical thinking, collaboration with others, adaptability to change, and the ability to achieve results in unfamiliar or changing situations.

Employee Performance was measured through indicators reflecting work quality, productivity, timeliness, and achievement of work targets, consistent with the employee-performance criteria discussed in the human resource management literature (Dessler, 2023).

Item wording was adjusted to the digital work context examined in this study. Prior to distribution, the questionnaire was reviewed for face and content appropriateness to ensure clarity and consistency between the item wording and the conceptual domains being measured. Construct validity and internal consistency were subsequently evaluated empirically through the PLS-SEM measurement model.

2.6. Operational Definition of Variables

Item wording was adjusted to the digital work context examined in this study. Prior to distribution, the questionnaire was reviewed for face and content appropriateness to ensure clarity and consistency between the item wording and the conceptual domains being measured. Construct validity and internal consistency were subsequently evaluated empirically through the PLS-SEM measurement model.

Table 2. Operational Definition and Measurement of Constructs

Construct	Operational Definition	Measurement Domains / Indicators
Digital HR Development (X1)	Employees' perceptions of digitally enabled HR practices and technologies used to facilitate employee learning and development.	Availability of digital learning platforms; use of HR technologies; accessibility of digital training; perceived effectiveness of digital learning.
Learning Agility (X2)	The individual capacity to learn from experience, adapt to changing situations, and apply learning effectively under new work conditions.	Mental Agility: critical thinking; People Agility: collaboration; Change Agility: adaptability to change; Results Agility: achievement in new or unfamiliar situations.
Employee Performance (Y)	Employees' perceived level of accomplishment in fulfilling work responsibilities and organizational	Work quality; productivity; timeliness; achievement of work targets.

The 12 observed indicators were specified as reflective indicators of their respective latent constructs in the measurement model.

2.7. Research Framework

The proposed model examined Digital HR Development and Learning Agility as two parallel exogenous constructs associated with Employee Performance. Learning Agility was not specified as either a mediator or moderator of the Digital HR Development-Employee Performance relationship.

Accordingly, the study tested two hypotheses:

H1: Digital HR Development is positively associated with Employee Performance.

H2: Learning Agility is positively associated with Employee Performance.

This specification enables the associations of the organizationally provided digital-development environment and employees' individual adaptive-learning capacity with performance to be estimated simultaneously without assuming a causal sequence between the two predictors.

2.8 Data Analysis Technique

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. PLS-SEM was selected because the study examined relationships among latent constructs within a relatively parsimonious predictive-explanatory model and sought to estimate the associations of multiple predictors with an endogenous construct simultaneously (Hair et al., 2019, 2022).

The analysis proceeded in two principal stages: assessment of the measurement model and assessment of the structural model.

Measurement Model Assessment

The reflective measurement model was evaluated for indicator reliability, convergent validity, internal consistency reliability, and discriminant validity. Indicator reliability was assessed using outer loadings, with values around .70 or higher considered satisfactory. Convergent validity was evaluated using the Average Variance Extracted (AVE), for which values of at least .50 indicate that a construct explains at least half of the variance in its indicators.

Internal consistency was assessed using Composite Reliability (CR) and Cronbach's alpha, with values of .70 or higher treated as acceptable. Discriminant validity was examined using both the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT). For the Fornell-Larcker assessment, the square root of each construct's AVE was compared with its correlations with other constructs. HTMT values below .90 were interpreted as evidence that the constructs were empirically distinguishable (Henseler et al., 2015; Hair et al., 2022).

Structural Model Assessment

Following confirmation of satisfactory measurement quality, the structural model was evaluated using the coefficient of determination (R^2) for Employee Performance and the standardized path coefficients linking Digital HR Development and Learning Agility to Employee Performance.

The statistical significance of the structural paths was assessed using a bootstrapping procedure with 5,000 resamples. Two-tailed hypothesis testing was applied at the 5% significance level. A structural relationship was considered statistically supported when the absolute *t*-statistic exceeded 1.96 and the corresponding *p*-value was below .05.

Because the design was cross-sectional and non-experimental, statistically significant path coefficients were interpreted as evidence of association rather than causation. The relative numerical magnitude of the standardized coefficients was also not interpreted as evidence that one predictor was statistically more important than the other unless a formal comparison of coefficients was undertaken.

Table 3. Hypothesis Testing Criteria (Hair et al., 2022)

Criterion	Decision Rule
$t\text{-statistic} > 1.96$ and $p\text{-value} < 0.05$	Hypothesis supported
$t\text{-statistic} \leq 1.96$ or $p\text{-value} \geq 0.05$	Hypothesis not supported

2.9 Research Ethics

Participation in the study was voluntary. Before completing the questionnaire, respondents were informed about the purpose of the research and provided informed consent. Responses were collected anonymously, and no personally identifying information was reported in the dataset or manuscript. Individual responses were treated confidentially and used exclusively for research purposes.

The voluntary and anonymous survey procedure was intended to protect respondents' privacy and minimize risks associated with participation.

3. Results

3.1. Respondent Characteristics

The respondents in this study consisted of 150 employees working in organizations that have implemented digital-based human resource management systems. Respondent characteristics were analyzed based on gender, age, education level, and years of service, as shown in Table 4.

Table 4. Respondent Characteristics (Processed Primary Data, 2026)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	82	54.7
	Female	68	45.3
Age	< 25 years	25	16.7
	25–35 years	74	49.3
	36–45 years	38	25.3
	> 45 years	13	8.7
Education	Diploma	21	14.0
	Bachelor's Degree	97	64.7
	Master's Degree	32	21.3
Years of Service	< 5 years	58	38.7
	5–10 years	54	36.0
	> 10 years	38	25.3

The largest respondent groups were male (54.7%), aged 25–35 years (49.3%), bachelor's degree holders (64.7%), and employees with less than five years of service (38.7%). These descriptive characteristics provide the profile of the sample used in the subsequent PLS-SEM analysis.

3.2. Measurement Model Evaluation (Outer Model)

The reflective measurement model was evaluated for indicator reliability, convergent validity, internal consistency reliability, and discriminant validity before the structural relationships were examined. Outer loadings for the 12 indicators are reported in Table 5.

Table 5. Outer Loading Values

Variable	Indicator	Loading Factor
Digital HR Development	DHRD1	0.821
	DHRD2	0.845
	DHRD3	0.876
	DHRD4	0.804
Learning Agility	LA1	0.832
	LA2	0.851
	LA3	0.889
	LA4	0.813
Employee Performance	EP1	0.867
	EP2	0.892
	EP3	0.854
	EP4	0.827

All indicators had outer loadings above 0.80, indicating satisfactory indicator reliability. Convergent validity and internal consistency reliability were then assessed using Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's alpha (Table 6).

Table 6. AVE, Composite Reliability, and Cronbach's Alpha

Variable	AVE	Composite Reliability	Cronbach's Alpha
Digital HR Development	0.703	0.904	0.859
Learning Agility	0.721	0.912	0.871
Employee Performance	0.745	0.921	0.886

AVE values exceeded the 0.50 threshold, and Composite Reliability and Cronbach's Alpha values exceeded 0.70 for all constructs, indicating satisfactory convergent validity and internal consistency reliability. Discriminant validity based on the Fornell-Larcker criterion is shown in Table 7.

Discriminant validity was assessed using both the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio. The Fornell-Larcker results are presented in Table 7.

Table 7. Discriminant Validity – Fornell-Larcker Criterion

Variable	DHRD	LA	EP
Digital HR Development (DHRD)	0.839		
Learning Agility (LA)	0.587	0.849	
Employee Performance (EP)	0.641	0.698	0.863

For each construct, the square root of AVE shown on the diagonal exceeded its correlations with the other constructs, supporting discriminant validity under the Fornell-Larcker criterion. The HTMT ratios are reported in Table 8.

Table 8. Heterotrait-Monotrait (HTMT) Ratio

Path	HTMT Value
DHRD → LA	0.693
DHRD → EP	0.751
LA → EP	0.794

All HTMT ratios were below 0.90, providing additional evidence that Digital HR Development, Learning Agility, and Employee Performance were empirically distinguishable. Taken together, the measurement-model results supported proceeding to the structural-model assessment.

3.3. Structural Model Evaluation (Inner Model)

The structural model was evaluated using the coefficient of determination (R^2) for the endogenous construct, Employee Performance. The result is presented in Table 9.

Table 9. R-Square Value

Endogenous Variable	R^2
Employee Performance	0.624

Digital HR Development and Learning Agility jointly accounted for 62.4% of the variance in Employee Performance ($R^2 = 0.624$). The remaining variance reflects influences not represented in the specified model and should not be attributed to particular omitted variables without direct empirical testing.

3.4. Hypothesis Testing

The two hypothesized structural relationships were tested using bootstrapping with 5,000 resamples. Standardized path coefficients, t-statistics, p-values, and hypothesis decisions are reported in Table 10.

Table 10. Path Coefficients and Hypothesis Testing

Hypothesis	Relationship	Path Coefficient	t-statistic	p-value	Decision
H1	DHRD → EP	0.358	4.712	0.000	Supported
H2	LA → EP	0.472	6.283	0.000	Supported

Digital HR Development was positively associated with Employee Performance ($\beta = 0.358$, $t = 4.712$, $p < .001$), supporting H1. Learning Agility was also positively associated with Employee Performance ($\beta = 0.472$, $t = 6.283$, $p < .001$), supporting H2. Although the standardized coefficient for Learning Agility was numerically larger than that for Digital HR Development, no formal comparison of the two coefficients was conducted; therefore, the result should not be interpreted as evidence that Learning Agility is statistically more important than Digital HR Development.

4. Discussion

The findings indicate that both employee-perceived Digital HR Development and Learning Agility were independently and positively associated with Employee Performance within the specified PLS-SEM model. Digital HR Development was positively associated with Employee Performance ($\beta = 0.358$, $p < .001$), while Learning Agility also showed a positive association ($\beta = 0.472$, $p < .001$). Together, the two predictors explained 62.4% of the variance in Employee Performance. The simultaneous inclusion of these constructs is theoretically meaningful because it brings together an organizationally provided developmental resource and an individual adaptive-learning capability within the same analytical framework. This perspective is consistent with broader digital-transformation

research emphasizing that successful transformation depends not only on technological infrastructure but also on the human and organizational capabilities required to use and adapt to digital technologies effectively (Trenerry et al., 2021; Verhoef et al., 2021).

4.1. Digital HR Development and Employee Performance

The positive association between Digital HR Development and Employee Performance suggests that employees who perceived greater access to digitally enabled learning, HR technologies, and development opportunities also tended to report higher levels of work performance. This result is consistent with the broader digital HRM literature. Zhou et al. (2022), in a meta-analysis of e-HRM research, reported positive relationships between e-HRM and organizational performance, while Theres and Strohmeier (2023), drawing on 96 empirical studies involving 37,924 observations, found medium-sized positive associations between digital HRM and multiple categories of performance. These converging findings strengthen the interpretation that digitalized HR practices can be associated with meaningful performance outcomes, although the magnitude and form of those relationships may vary across settings.

The present findings are also consistent with more employee-centered evidence. Nyathi and Kekwaletswe (2024) found that e-HRM usage was positively related to employee outcomes, including employee performance, and that these employee outcomes contributed to broader organizational performance. Hu and Lan (2024) similarly showed that digital HRM can influence employee-level outcomes through psychological mechanisms, while Lou et al. (2024) linked HRM and HRD practices with job performance in digitally transforming ICT companies. Taken together, these studies suggest that the performance implications of digital HR systems are not confined to administrative efficiency; they also depend on how employees experience, use, and benefit from digitally enabled HR practices.

This employee-centered interpretation is particularly relevant to the present study because Digital HR Development was operationalized through employees' perceptions of digital-learning availability, HR-technology utilization, accessibility of development programs, and the effectiveness of digital learning. The construct therefore represents the experienced developmental dimension of digital HRM, rather than the technological sophistication of the organization itself. Thite (2022) similarly argues that Digital Human Resource Development should be understood as the integration of digital technologies into the design and execution of employee development rather than as technology adoption alone. More recent reviews also characterize Digital HRM as a socio-technical domain in which technological systems, HR processes, employees, and organizational context interact to create value (Sakib et al., 2025).

Accordingly, the present result should not be interpreted as evidence that introducing digital technologies automatically improves employee performance. Digital platforms may provide access, flexibility, information, and developmental resources, but performance benefits depend on how those technologies are accepted and used. Theres and Strohmeier's (2024) meta-analytic investigation of digital HRM adoption likewise demonstrates that employee acceptance and use are influenced by multiple contextual and behavioral factors and can differ across organizational settings. This provides further support for interpreting Digital HR Development as a human-technology interaction rather than a purely technological intervention.

4.2. *Learning Agility and Employee Performance*

Learning Agility was positively associated with Employee Performance ($\beta = 0.472$, $p < .001$), indicating that employees who reported greater capacity to learn from experience, respond to change, and apply learning under unfamiliar conditions also tended to report higher performance. This finding is consistent with the conceptualization of Learning Agility as an adaptive capability that enables individuals to respond constructively when established knowledge or routines are insufficient.

Previous empirical evidence supports this interpretation. Tripathi (2024) found that Learning Agility played an important role in linking organizational learning culture with performance in the Indian IT sector. Tripathi and Kalia (2024) further demonstrated that Learning Agility was positively associated with organizational innovation and performance within technology-intensive organizations. These studies reinforce the proposition that adaptive learning capability becomes particularly valuable in contexts characterized by rapid change, uncertainty, and continuous knowledge requirements.

The relationship between Learning Agility and digitally enabled development is also supported by research on learning technologies. Ghosh et al. (2021) found that e-learning technology and organizational culture contributed to Learning Agility, highlighting that technological learning environments can support employees' ability to acquire and apply new knowledge. This is particularly relevant to the present model because Digital HR Development provides digitally enabled learning resources, whereas Learning Agility represents the employee capability to derive value from learning experiences.

More recent evidence strengthens this interpretation. Nayak and Malik (2026), using PLS-SEM with Gen Z employees in the Indian IT sector, found that Learning Agility served as an important mechanism through which organizational learning culture supported employee competency development. Shatila (2026) similarly demonstrated that Learning Agility helped explain how digital reskilling translated into job performance. These findings suggest that Learning Agility is particularly relevant when organizations invest in digitally oriented learning and reskilling because employees must not only receive developmental opportunities but also absorb, reinterpret, and apply new knowledge in changing work environments.

Although the standardized coefficient for Learning Agility ($\beta = 0.472$) was numerically larger than that for Digital HR Development ($\beta = 0.358$), this difference should remain descriptive. The present study did not conduct a formal statistical test comparing the two structural coefficients. Consequently, the findings do not demonstrate that Learning Agility is statistically stronger, universally more important, or a substitute for Digital HR Development

4.3. *Joint Interpretation of Digital HR Development and Learning Agility*

A central contribution of the study lies in examining Digital HR Development and Learning Agility simultaneously rather than as isolated predictors. Their independent positive associations with Employee Performance suggest that they represent **distinct but** complementary resources. Digital HR Development reflects development opportunities embedded in the organizational environment, whereas Learning Agility reflects an individual employee's capacity to convert experience and new information into adaptive action.

This interpretation is consistent with broader research on digital transformation. Trenerry et al. (2021) conceptualize workplace digital transformation as a multi-level process involving technological, organizational, team, and individual factors. Verhoef et al. (2021) likewise argue that digital transformation requires organizational resources and capabilities rather than technological investment alone. In the HR domain, the growing Digital HRM literature similarly emphasizes the integration of technology with human and organizational processes rather than treating digitalization as a purely technical phenomenon (Sakib et al., 2025; Thite, 2022).

The current model provides an employee-level illustration of this broader socio-technical principle. Employees may be exposed to the same organizational digital-development infrastructure but differ in their capacity to learn, adapt, and apply knowledge. Conversely, highly learning-agile employees may still be constrained if relevant digital learning opportunities and development resources are inaccessible or ineffective. The independent associations observed in the present study therefore support a complementary interpretation in which organizational developmental resources and individual adaptive capabilities operate side by side.

This interpretation also helps position the study relative to Shatila (2026). Whereas Shatila conceptualized Learning Agility as a mechanism linking digital reskilling with job performance, the present study intentionally specifies Learning Agility as an independent parallel predictor. The findings therefore extend the emerging literature by demonstrating that Learning Agility retains a direct association with Employee Performance even when employees' perceptions of Digital HR Development are included simultaneously in the model. This does not invalidate mediation-based models; rather, it suggests that multiple theoretical specifications of the relationship between organizational development practices, employee learning capability, and performance remain plausible and warrant further testing.

4.4. Theoretical and Managerial Implications

Theoretically, the study contributes to the Digital HRM and employee-development literature in three ways. First, it narrows the broad concept of digital HRM to a specific developmental dimension by focusing on employees' experiences of digital learning resources, HR technologies, and development accessibility. This distinction is important because the digital HRM literature covers a wide range of HR functions, and recent reviews have emphasized the continuing need for conceptual precision in the field (Theres & Strohmeier, 2024; Sakib et al., 2025).

Second, the study integrates organizational and individual perspectives within a single model. Existing research frequently examines technology-enabled HR systems or adaptive employee capabilities separately. By estimating Digital HR Development and Learning Agility as parallel predictors, the present model provides evidence that performance differences may be understood more fully when both the development environment and the employee's learning capability are considered together.

Third, the findings support a socio-technical interpretation of digital employee development. Recent research on emerging technologies and employee performance similarly suggests that digital technologies can create both opportunities and challenges and that employee capabilities, engagement, and adaptation remain central to translating technology into productive outcomes (Gupta et al., 2024). The present results reinforce this

perspective by showing that technology-enabled development and adaptive learning capability provide independent explanatory information within the same performance model

4.5. Limitations and Directions for Future Research

From a managerial perspective, the findings suggest that digital HR investment should not be restricted to acquiring platforms or automating HR processes. Organizations should ensure that digital-learning systems are accessible, relevant, and integrated into meaningful employee-development practices. This aligns with Thite's (2022) argument that Digital HRD requires strategic alignment between digital capabilities and employee development.

At the same time, organizations should cultivate the employee capabilities required to benefit from those systems. Training initiatives that encourage experimentation, feedback seeking, reflection, knowledge application, and adaptation may help strengthen Learning Agility. The evidence from Ghosh et al. (2021), Tripathi and Kalia (2024), and Nayak and Malik (2026) suggests that learning-supportive environments and technology-enabled learning can play an important role in developing adaptive employee capabilities.

The practical implication is therefore not to choose between investment in digital HR infrastructure and investment in employee adaptability. The results instead favor an integrated approach in which organizations provide high-quality digital-development opportunities while cultivating employees' willingness and ability to learn from experience and apply new knowledge. This is particularly relevant in digitally transforming workplaces where both technologies and required competencies evolve continuously.

4.6. Limitations and Directions for Future Research

Several limitations should guide interpretation of these findings. First, the cross-sectional and non-experimental design does not establish temporal ordering or causal relationships. The positive structural paths therefore represent statistical associations rather than evidence that Digital HR Development or Learning Agility causes improved Employee Performance.

Second, the use of purposive non-probability sampling limits generalizability beyond the participating respondents and organizational settings. Although respondents were drawn from government, educational, and private-sector organizations, this contextual breadth may conceal sector-specific differences. Future studies should therefore consider stratified or probability-based sampling and conduct sector-specific or multi-group analyses.

Third, all focal constructs were measured through self-reported questionnaires. The observed relationships may consequently be affected by common-method and perceptual influences. Future research could complement employee perceptions with supervisor-rated performance, objective work outcomes, HR-system usage records, or longitudinal indicators.

Fourth, the current model deliberately treats Digital HR Development and Learning Agility as parallel predictors. Future research should compare alternative theoretically grounded models in which Learning Agility operates as a mediator or moderator. Longitudinal studies would be especially valuable for determining whether digitally enabled development strengthens Learning Agility over time and whether changes in Learning Agility subsequently predict performance.

Finally, future research could examine additional mechanisms that connect digital-development practices with performance, such as digital competence, employee engagement, skill utilization, technology acceptance, or organizational learning culture. Such

extensions would help clarify when and through which processes digital HR development produces meaningful employee outcomes

5. Conclusion

This study examined the associations of Digital HR Development and Learning Agility with Employee Performance among employees of Indonesian organizations using digital HR systems. The findings showed that both Digital HR Development ($\beta = 0.358, p < .001$) and Learning Agility ($\beta = 0.472, p < .001$) were positively associated with Employee Performance. Together, the two predictors explained 62.4% of the variance in Employee Performance ($R^2 = 0.624$). Although Learning Agility produced the larger standardized coefficient within the specified model, this numerical difference should not be interpreted as evidence that Learning Agility is statistically or universally more important than Digital HR Development.

The study contributes to the digital HRM and employee-development literature by demonstrating that employees' perceptions of digitally enabled HR development practices and their individual learning agility can be examined simultaneously as distinct but complementary correlates of performance. This joint perspective highlights the importance of considering both organizationally provided development resources and employees' adaptive learning capabilities when examining performance in digitally enabled work environments. From a practical perspective, organizations may benefit from strengthening digital learning infrastructure, technology-supported employee-development opportunities, and HR systems while also fostering employees' capacity to learn, adapt, and apply new knowledge under changing work conditions. The findings do not suggest that one strategy should replace the other; rather, they indicate that both organizational development practices and individual learning capabilities are relevant within the same performance model.

The findings should be interpreted in light of several limitations. First, the cross-sectional and non-experimental design does not permit causal or temporal conclusions. Second, the use of purposive non-probability sampling and the Indonesian organizational context limits the generalizability of the findings beyond the participating respondents and settings. Third, the study relied on self-reported measures, which may be affected by perceptual and common-method bias. Finally, the model examined only Digital HR Development and Learning Agility as predictors of Employee Performance; therefore, the unexplained variance should not be attributed to specific organizational or individual factors that were not directly measured in this study.

Future research should test the robustness of these relationships using longitudinal designs, probability-based or broader multi-organizational samples, and cross-country comparisons. Subsequent studies may also extend the model by examining theoretically justified variables such as employee engagement, organizational culture, leadership, or other work-related factors. In addition, future research could investigate whether Learning Agility functions as a mediator or moderator in the relationship between digitally enabled HR development and Employee Performance. Such extensions would help clarify the mechanisms through which organizational development practices and employee learning capabilities jointly relate to performance over time

Declarations

Author Contribution Statement

Syuryatman Desri and Masdalena contributed to the conception and design of the study. Syuryatman Desri contributed to data collection, data analysis, methodology development, and interpretation of the findings. Masdalena contributed to the research design, interpretation of the results, and critical revision of the manuscript. Both authors contributed to drafting and revising the manuscript, approved the final version, and agreed to be accountable for all aspects of the work.

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Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request. Restrictions may apply to the availability of the data due to privacy, confidentiality, or institutional considerations.

Declaration of Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

Additional Information

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AI Use Statement

During the preparation of this manuscript, the authors used OpenAI ChatGPT (GPT-5.6) solely to support language editing, including grammar, clarity, readability, and phrasing. The authors independently reviewed, revised, and verified all AI-assisted text and take full responsibility for the accuracy, originality, and integrity of the content of the manuscript.

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