Human resource management at joint stock commercial banks in Vietnam in the context of digital transformation

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Abstract: This study aims to analyze the impact of some factors on human resource development in some joint stock commercial banks in Vietnam in the context of digital transformation. Survey data were collected from 330 employees working at joint stock commercial banks in Vietnam. The study used Cronbach's Alpha testing method, exploratory factor analysis method and multiple regression analysis. The estimation results show that leadership's viewpoint, training and capacity building, salary and benefits, working environment and awareness of digital transformation are 5 important factors affecting human resource development in joint stock commercial banks in Vietnam. Based on the research results, some policies are proposed to develop human resources in the banking industry in Vietnam.

Keywords: human resource management, stock commercial banks, digital transformation, Vietnam.

1. Introduction

In the context of increasing global integration and digital transformation, the role of human resource management (HRM) in joint stock commercial banks has become a cornerstone for maintaining competitiveness and achieving sustainable development. The banking sector, inherently characterized by high levels of intellectual labor, service complexity, and systemic risk, requires a strategically aligned HRM system to attract, develop, and retain talent capable of adapting to rapidly evolving market demands. Particularly in emerging economies, where joint stock commercial banks function as a vital pillar of financial intermediation, effective HRM is not merely an operational necessity but a strategic imperative. As banking institutions face mounting pressures from regulatory reforms, technological innovation, and shifting customer expectations, optimizing human capital emerges as a decisive factor for organizational agility and performance. Accordingly, research into the multifaceted dimensions of HRM in the banking sector - ranging from leadership approaches to employee development mechanisms - holds critical theoretical and practical implications. This paper aims to explore the determinants that significantly influence human resource development (HRD) in joint stock commercial banks, thereby contributing to a deeper understanding of how internal managerial practices intersect with broader trends in workforce modernization.

Human resource development within joint stock commercial banks is shaped by an intricate interplay of institutional leadership, training regimes, compensation structures, workplace conditions, and digital transformation awareness. First and foremost, the leadership's strategic perspective serves as a guiding force for HRD outcomes. Transformational leaders - those who inspire innovation, articulate a clear vision, and support employee empowerment - tend to cultivate organizational cultures that prioritize learning and talent development. Leadership that lacks such orientation may inadvertently stifle growth by maintaining rigid hierarchies and transactional management styles, which are misaligned with contemporary banking demands.

Training and capacity building constitute another critical dimension. In banking environments where regulatory updates, financial instruments, and technological applications evolve continuously, structured and recurrent training programs are indispensable. Effective training enhances not only technical competencies but also soft skills such as risk awareness, client communication, and ethical standards. Furthermore, training must be aligned with long-term organizational goals and personalized to individual career pathways to maximize developmental impact.

Compensation and benefits policies directly influence employee motivation, engagement, and retention. Competitive salary structures, performance-linked bonuses, and non-monetary incentives such as health benefits and career advancement opportunities function as tangible acknowledgments of employee value. Conversely, inadequate compensation may lead to brain drain, decreased morale, and diminished organizational loyalty, particularly in sectors where skilled professionals are in high demand.

The working environment, encompassing both physical and psychosocial aspects, also plays a pivotal role. A conducive working atmosphere - defined by ergonomics, occupational safety, interpersonal respect, and transparent communication - promotes well-being and productivity. Joint stock commercial banks that foster inclusive, non-discriminatory, and collaborative workplaces often report higher employee satisfaction and innovation capacity.

Lastly, awareness of digital transformation significantly influences HRD in the modern banking landscape. Digital literacy, openness to adopting digital tools, and engagement with technological change are now essential attributes of a competent banking workforce. Institutions that integrate digital transformation into their HR strategy - through digital upskilling, agile work models, and technology-driven performance evaluations - position themselves more effectively in the competitive financial sector.

In sum, human resource development in joint stock commercial banks is a multidimensional construct, shaped by leadership philosophy, development investments, equitable remuneration, workplace culture, and technological orientation. Addressing these dimensions holistically enables banks not only to improve internal efficiency but also to adapt sustainably to external disruptions in the financial ecosystem.

This article will demonstrate the application of Cronbach's Alpha testing method, exploratory factor analysis method and multiple regression analysis to determine factors affecting human resource development in joint stock commercial banks in Vietnam. The structure of the article is divided into 4 sections: In addition to the introduction in Section 1, Section 2 shows the literature of the research, Section 3 is devoted to the research results and Section 4 is for some implications.

2. Literature review

There has been a wide range of research on investigating factors, like leadership's viewpoint, training and capacity building, salary and benefits, working environment and awareness of digital transformation, affecting human resource development, especially in this era of digital transformation.

Zhang & Chen (2024) aimed to investigate the digital transformation of human resource management within the broader framework of the digital economy. It concentrated on identifying the key enablers, strategic directions, and consequential effects associated with this transformation. The research posited that five primary drivers influenced the shift toward digital HRM practices: the evolving digital expectations of internal stakeholders, advancements in sector-specific digital innovation, competitive pressures, governance of digital initiatives, and the overarching demands of the digital age. The analysis examined the fundamental components of digital transformation in HRM, including the establishment of digitally integrated work environments, the modernization of HRM functions through technological applications, and the provision of digitally facilitated employee services. Notably, the study underscored that digitalized HR processes encompassed the use of advanced technologies in executing core functions such as recruitment, employee development, and performance evaluation. While acknowledging the significant advantages this transformation conferred upon organizational growth and efficiency, the study also highlighted the challenges inherent in transitioning from legacy systems to modern frameworks, as well as the potential adverse consequences emerging from the adoption of new digital HR structures.

Ajayi-Nifise et al. (2024) critically examined the human resource (HR) lens in facilitating organizational transformation and nurturing digitally adept personnel within the banking industry. Amidst the prevailing wave of digital disruption, financial institutions were compelled to reconfigure operational models and strategic frameworks to harness the potential of technological advancements. The emphasis extended beyond the mere deployment of innovative digital tools, encompassing a comprehensive realignment of human capital to effectively

navigate the intricacies of digital transition. Within this evolving paradigm, HR assumed a strategic leadership role, entrusted with steering institutional change, embedding a culture conducive to innovation, and cultivating a workforce proficient in digital fluency. Change management emerged as a foundational component of this process, wherein HR professionals were tasked with engendering awareness, fostering organizational readiness, and aligning personnel with the overarching digital vision. In addition, HR departments served as the architects of capacity-building initiatives, crafting targeted upskilling programs to equip existing employees with the competencies required to thrive in a technologically dynamic environment. Concurrently, the strategic cultivation of digital talent demanded a proactive approach to identifying, recruiting, and retaining individuals with specialized expertise. Effective HR strategies prioritized the development of a resilient talent pipeline aligned with institutional digital aspirations - one that integrated technical acumen with a growth-oriented mindset characterized by adaptability and lifelong learning. This review provided a comprehensive insight into the critical role HR played in shaping the digital evolution of the contemporary banking sector.

The investigation by Zervas & Stiakakis (2024) was driven by an imperative to elucidate the role of human resource (HR) leadership in cultivating digital competencies as a catalyst for enduring economic sustainability. Given the increasing indispensability of digital proficiency to institutional adaptability and market viability, the research scrutinizes the interconnection among HR leadership practices, digital capability enhancement, and sustainable economic trajectories. The study utilized the SERVQUAL framework to evaluate discrepancies between employees' anticipated service standards and their actual experiences, with specific attention to variances across demographic indicators such as age, educational attainment, and occupational classification. Drawing upon data from a sample of 476 respondents across multiple member states of the European Union, the analysis reveals that demographic characteristics markedly influence individual assessments of service quality. The empirical evidence indicates a pronounced congruence between anticipated and perceived dimensions of service delivery, underscoring the pivotal function of HR leadership in addressing deficiencies in digital skillsets. Furthermore, the study emphasizes the strategic imperative of embedding HR leadership methodologies into broader digitalization initiatives to ensure that technological advancement underpins not only short-term organizational efficacy but also contributes substantively to the realization of long-term economic sustainability objectives.

Pandey (2011) asserted that Community-Based Tourism (CBT) in Nepal was recognized as a pivotal sector contributing to sustainable development and local empowerment. Although a variety of training initiatives were conducted with an emphasis on advancing the tourism sector, there remained a notable scarcity of instructional resources specifically tailored to CBT. The need for a structured and effective pedagogical approach, along with the exchange of knowledge and practical insights among facilitators, trainees, and relevant stakeholders, persisted as a critical priority. Moreover, the implementation of systematic monitoring and consistent follow-up mechanisms for previously conducted training programs was considered essential to enhance their long-term impact and relevance.

Mahaputra (2022) provided the literature review on the relationship between remuneration, workplace conditions, and employee productivity constituted a scholarly effort to formulate research hypotheses concerning variable interactions within the field of Human Resource Management. This review adopted a library-based research methodology, drawing on secondary data from digital academic platforms such as Google Scholar, Mendeley, and other reputable online sources. The findings of the review indicated that: (1) compensation significantly influenced employee productivity; and (2) the quality of the work environment also exerted a measurable impact on productivity outcomes. In addition to these two external variables - wages and work setting - that affected the dependent variable of productivity, the review identified several additional influencing elements, including peer relationships, leadership quality, and workload intensity.

3. Research results

Research data and model

This study used data from data collected from employees working in joint stock banks in Vietnam in 2024. The study collected a convenient sample. An appropriately determined sample size requires 5 times the number of questionnaires, corresponding to a sample size of at least 110 as confirmed by Hair et al. (2006). In this study, we

distributed 335 questionnaires and collected 330 valid questionnaires. There were 5 invalid questionnaires and were excluded from the study. Based on previous studies, the estimation equation is expressed as follows:

$$HRD_t = \beta_0 + \beta_1 LSV_t + \beta_2 TR_t + \beta_3 SB_t + \beta_4 WE_t + \beta_5 DT_t + \varepsilon_t,$$

in which, HRD, LSV, TR, SB, WE AND DT, respectively, refer to human resource development, leadership's viewpoint, training and capacity building, salary and benefits, working environment and awareness of digital transformation.

Empirical results

First, we describe the research sample. Table 1 shows that out of 330 responses, 166 were under 30 years old, 101 were between 31 and 39 years old, and 63 were over 40 years old, accounting for 50.3%, 30.6%, and 19.1%, respectively.

Table 1 Range of employee age

EMPLOYEE AGE	QUANTITY	PROPORTION
Up to 30	166	50.3%
31-39	101	30.6%
From 40	63	19.1%

Next, Table 2 shows that the selected scales are suitable because they have Cronbach's alpha coefficients greater than 0.6 and meet the requirements, so these scales are suitable for EFA analysis.

Table 2 Reliability of the scale

LATENT VARIABLES	QUANTITY OF OBSERVED VARIABLES	CRONBACH'S ALPHA
HRD	6	.845
LSV	4	.900
TR	4	.849
SB	4	.734
WE	4	.685
DT	3	.681

Table 2 shows that the selected scales are suitable since their Cronbach's alpha coefficients are all greater than 0.6 and meet the requirements, so these scales are suitable for EFA analysis. According to KMO and Bartlett's test, as in Table 3, the KMO coefficient reached 0.715 and was greater than 0.5, and at the same time, Bartlett's test on sphericity showed that Sig. = 0.000, so the choice of EFA analysis was appropriate.

Table 3. KMO and Bartlett test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.714
Bartlett's Test of Sphericity	Approx. Chi-Square	2457.111
	df	171
	Sig.	.000

Table 4 shows the rotated component matrix which reveals that the observed variables are classified and kept in 5 groups with factor loading coefficients greater than 0.5, so all observed variables are not eliminated from the research model. These observed variables, after being analyzed from the rotated matrix, are still concentrated in the correct groups as proposed by the research model. This proves that the observed variables in each group have

good explanatory ability when they are in that group.

Table 4. Rotated Component Matrix[a]

| | Component | | | | |
	1	2	3	4	5
LSV2	.899				
LSV4	.888				
LSV3	.860				
LSV1	.842				
TR3		.897			
TR4		.842			
TR2		.811			
TR1		.729			
SB3			.886		
SB1			.808		
SB2			.742		
SB4			.557		
WE3				.768	
WE4				.719	
WE2				.714	
WE1				.640	
DT2					.793
DT1					.787
DT3					.740

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Examining the linear correlations between dependent and independent variables indicates whether or not there is a relationship between the variables and whether linear regression analysis is appropriate. Table 5 shows that there is a linear relationship between these independent variables and the dependent variable. Among the independent variables, there is no strong correlation when the absolute value of the correlation coefficient between pairs of variables is less than 0.5, so the possibility of multicollinearity is low.

Table 5. Linear correlation between variables

		LSV	TR	SB	WE	DT
HRD	Pearson Correlation	.200**	.219**	.150**	.128*	.165**
	Sig. (2-tailed)	.000	.000	.006	.020	.003
	N	330	330	330	330	330

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Based on the theoretical basis and the results of this correlation coefficient analysis, the author continues to perform linear regression to specifically determine the weight of each factor affecting human resource development. The regression result is presented as in Table 6. In addition to the regression results, some other necessary tests were also performed, for example, the Sig.F coefficient (in the ANOVA table) is very small, close to 0, showing that the variables included in the model are all statistically significant at the 5% significance level. Therefore, it can be affirmed that all 5 independent variables in the research model are related to the dependent variable. The Adjusted R Square coefficient is determined to be 0.103. In other words, the regression model consisting of 5 independent variables can explain 10.3% of the meaning of the dependent variable; the remaining percentage will be explained by other factors outside the model. The VIF coefficient of the independent variables

reaches the highest value of 1.072, less than 2. Therefore, this regression model does not have multicollinearity. The Durbin-Watson statistic has a value of 2.025, in the range (1; 3), indicating that the residuals in the model are not correlated with each other.

Table 6. Regression results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.856	.459		1.864	.063		
	LSV	.173	.056	.164	3.094	.002	.972	1.029
	TR	.159	.057	.151	2.788	.006	.933	1.072
	SB	.131	.059	.117	2.230	.026	.987	1.013
	WE	.147	.078	.099	1.876	.062	.978	1.023
	DT	.148	.063	.124	2.343	.020	.976	1.024

a. Dependent Variable: HRD

The estimated coefficients of leadership's viewpoint, training and capacity building, salary and benefits, working environment and awareness of digital transformation are all positive and the estimated coefficients of these 5 variables are all statistically significant at the 5 or 10% levels.

4. Implications

In the context of joint stock commercial banks in Vietnam, leadership's perspective served as a foundational element shaping the trajectory of human resource development, as it directed both strategic priorities and internal culture. When banking leaders demonstrated commitment to nurturing talent and embracing digital progress, they cultivated a forward-looking environment conducive to learning and innovation. Training and capacity building functioned as essential mechanisms for enhancing workforce adaptability in response to the sector's rapid technological evolution. Through structured and targeted learning programs, banks strengthened employee competencies, thereby fostering organizational responsiveness and resilience. Remuneration and benefits played a pivotal role in reinforcing employee engagement, loyalty, and professional growth. By offering fair, competitive compensation packages, banks attracted high-calibre talent and incentivized sustained performance in an increasingly dynamic market. The quality of the working environment contributed meaningfully to human resource development by ensuring employees' psychological well-being and operational satisfaction. Inclusive, flexible, and professionally supportive workplaces enabled staff to maximize their potential and collaborate effectively. Finally, awareness of digital transformation proved indispensable, as it ensured alignment between human capital capabilities and emerging digital imperatives. Promoting a digitally literate mindset empowered employees to acquire future-relevant skills and actively contribute to innovation within the evolving banking landscape.

In the context of joint stock commercial banks in Vietnam, leadership's perspective must be reoriented to prioritize human capital as a strategic driver of long-term competitiveness in the digital economy. Policy frameworks should promote leadership development programs that emphasize visionary thinking, digital literacy, and inclusive management styles. Bank executives are encouraged to adopt a transformational leadership approach, which fosters innovation and empowers employees to engage in continuous learning. This requires regulatory bodies and industry associations to provide structured guidance and incentives for banks to institutionalize leadership models aligned with digital transformation objectives.

With respect to training and capacity building, policy interventions should mandate the integration of future-ready skills into organizational learning and development frameworks. Vietnamese joint stock banks must adopt competency-based training systems that are responsive to rapid technological advancements, particularly in areas such as fintech, cybersecurity, and digital banking operations. Collaborative partnerships with academic institutions and edtech providers can enhance training effectiveness and scalability. Furthermore, internal

knowledge-sharing platforms should be formalized to foster a culture of continuous professional development across all organizational tiers.

Regarding salary and benefits, policy makers and bank management should ensure that remuneration structures are both performance-based and aligned with industry benchmarks, especially for roles critical to digital transformation. Comprehensive reward strategies must incorporate non-monetary benefits such as flexible work arrangements, professional development subsidies, and wellness programs to attract and retain digitally competent talent. It is essential that compensation packages are perceived as equitable and transparent to promote motivation and reduce turnover. Moreover, regulatory oversight should support mechanisms that allow for dynamic wage adjustment in line with skill demand and evolving job functions.

In terms of working environment, joint stock banks must develop organizational policies that foster inclusivity, adaptability, and psychological well-being in the workplace. Physical and virtual workspaces should be optimized to support hybrid work models, enabling higher autonomy and efficiency for digitally oriented roles. Institutional policies must also address issues of employee mental health and occupational stress through targeted interventions and feedback mechanisms. Enhancing internal communication channels and participatory decision-making structures will further contribute to a supportive and development-focused organizational climate.

Lastly, increasing awareness of digital transformation requires that banks integrate digital mindset cultivation into their HR and strategic planning processes. Policies should incentivize digital innovation through recognition systems, cross-functional project teams, and experimentation-friendly cultures. Employee awareness programs must go beyond technical training to include ethical considerations, data privacy, and the societal impact of digital technologies. National banking regulators and professional associations should collaborate to provide guidelines and frameworks that assist joint stock banks in embedding digital transformation awareness into institutional culture.

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