



Impact of Creative Innovation and Digital Transformation on Business Efficiency: Evidence from Commercial Banks in Vietnam

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Abstract

Background: In an increasingly digital and competitive financial environment, commercial banks in Vietnam are under growing pressure to enhance their business efficiency through the adoption of creative innovation and digital transformation. These strategic imperatives demand not only technological upgrades but also organisational readiness, including internal capabilities such as employee engagement, leadership style, corporate culture, financial capacity, and managerial competence.

Objective: This study examines how creative innovation and digital transformation directly influence business efficiency in Vietnam's commercial banking sector and identifies key organisational factors that support these two strategic drivers.

Methodology: This study employs a descriptive quantitative research design, utilising a structured survey of 942 employees from 30 commercial banks across Vietnam. The survey instrument was refined through expert consultation to ensure contextual relevance. Structural Equation Modelling (SEM) was employed to examine the relationships among internal organisational capabilities, creative innovation, digital transformation, and business efficiency.

Result: The empirical findings indicate that creative innovation management capacity and staff engagement are the two primary factors that directly and significantly influence business efficiency. Furthermore, while not the most dominant pathway, digital transformation is confirmed to play a secondary, yet statistically significant, mediating role in the relationship between the organisation's internal capabilities and ultimate performance outcomes.

Conclusion: The findings underscore the critical imperative for banking institutions in emerging markets to cultivate people-centred, innovation-driven ecosystems. The success of these ecosystems is intrinsically linked to investments in key internal capabilities. Therefore, the strategic development of staff engagement, targeted leadership development, and foundational digital readiness must be the highest organisational priority for bank executives and key stakeholders.

Unique Contribution: This study makes a novel contribution to the corporate strategy literature by empirically positing and validating the roles of digital transformation and creative innovation as dual-process mediators linking organisational capabilities to enhanced company efficiency

within the rapidly evolving financial ecosystems of developing economies.

Key Recommendation: Bank executives operating in emerging regions are strongly advised to prioritise strategic investment in a people-centred, innovation-led model to enhance operational efficiency and sustain banking performance significantly. This necessitates immediate and sustained funding for employee engagement, leadership development, and structural innovation to drive and anchor digital transformation initiatives effectively.

Keywords: Creative innovation, digital transformation, business efficiency, banking sector.

Introduction

Banking is evolving due to rapid technology innovation and changing consumer expectations. Commercial banks, especially in developing nations like Vietnam, must improve their services, compete effectively, and embrace digital technologies. Digital platforms, automated services, and data-driven decision-making are changing banking paradigms. Thus, more than ever, internal creativity, competent management, and an encouraging workplace are needed. Modern banking strategies promote efficiency through innovation and digital transformation (Akhtar et al., 2021). Creative innovation firms assist organisations in understanding customers' needs, optimising processes, and creating new products. Digital transformation improves operational agility and scalability, enabling more effective strategy execution. Successful strategic actions depend on the firm's human resources, leadership, culture, financial strength, and managerial competence.

Innovation and digitalisation boost performance, but their reasons are unknown, especially in emerging economies. Vietnam's banking sector is vital to economic growth and financial inclusion, although studies on organisational causes and performance outcomes are limited. Research on technology adoption and service innovation is primarily technical or marketing-focused, leaving a gap in understanding how employee engagement, leadership style, and corporate culture influence creativity and efficiency (Alam et al., 2024). This study addresses that gap by linking internal organisational features to creativity and commercial efficiency using an integrated approach. We examine how employee engagement, leadership style, corporate culture, and financial and managerial capacity affect a commercial bank's creative innovation, digital transformation, and business efficiency. The approach uses organisational behaviour theory, innovation management, and strategic capability frameworks.

This study extends prior research by empirically examining how internal organisational factors, such as employee engagement, leadership, culture, financial and managerial capacity, influence creative innovation and digital transformation, which in turn drive business efficiency. It addresses gaps in existing literature by contextualising these relationships within Vietnam's commercial banking sector using a robust SEM framework.

Digitalization, government reform, and competition are altering Vietnam's banking industry. The National Digital Transformation Program to 2025 is one of numerous Vietnamese government programs promoting FinTech and digital banking. Over 90% of Vietnamese commercial banks will have digital transformation strategies by 2023. However,

implementation rates and results vary. Some banks effectively integrate mobile banking apps, AI chatbots, and big data analytics, but others suffer organisational resistance, skill gaps, or insufficient investment. Essential question: Which internal characteristics hinder bank innovation and digital transformation?

Here, understanding the reasons behind innovation and transformation is strategic, not academic. It helps bank executives and consultants improve their interventions, resource management, and overall performance. Therefore, this study examines how creative innovation and digital transformation directly influence business efficiency in Vietnam's commercial banking sector, and identifies key organizational factors that support these two strategic drivers.

Literature Review

Creative innovation (CI)

Creative innovation entails developing and executing business-beneficial processes, goods, services, and ideas. Inventing and using helpful ideas is innovative and inventive. Banking innovations may include digital services, process automation, and client experience (Ullah & Azeem, 2024). Innovation boosts company competitiveness and adaptability. Creativity increases with exploration, failure, and cross-functional collaboration. Employee engagement, leadership style, and resources affect it. Creative innovation helps banks differentiate, enhance efficiency, and meet changing consumer expectations for long-term success.

Digital transformation (DT)

Digital transformation transforms operations and customer value by integrating digital technologies into all company elements. More than new tools. Method, business model, and organisational culture must change. Digital transformation in banking includes mobile banking, AI-based client support, digital payments, and internal process automation (Li et al., 2024). Digitisation demands leadership, personnel preparedness, financial investment, and a supportive culture—results: increased efficiency, cheaper costs, and happy consumers. Issues include change management, cybersecurity, and labour reskilling (Lee et al., 2022). Digital transformation drives modern banking innovation and competitive advantage through strategy and technology.

Business efficiency (BE)

Business efficiency is the company's capacity to utilise resources, decrease waste, and deliver products and services efficiently while enhancing quality. It maximises output-to-input throughout operational processes (Tefera & Abebe, 2024). Efficiency enables banks to reduce expenses, enhance customer service, and remain profitable in a competitive market. Banks can enhance their risk management, procedures, and processing times by becoming more efficient. The study found that financial, customer, internal process, and learning perspectives improve organisational efficiency (Ally et al., 2025). Leadership, innovation, digital adoption, and employee involvement boost efficiency. Improving efficiency can make businesses more nimble, scalable, and profitable in changing situations.

Theoretical Framework

Employee engagement (EE), Creative innovation (CI), Digital transformation (DT), Business efficiency (BE)

Business efficiency refers to how effectively a company utilises its resources. Productivity, dedication, and customer service improve with employee involvement. All these acts increase efficiency. Engagement in banking can reduce service errors, raise customer satisfaction, and boost efficiency (Meng & Imran, 2024). Disengagement can lead to delays, errors, and increased turnover. Thus, employee engagement improves morale and business. According to this theory, engagement has a significant impact on operational performance. Digital transformation demands employee support for new systems and processes (Ahmad et al., 2023). Engaged workers are more likely to learn new skills, attend training, and support organisational change. Therefore, the authors proposed hypotheses H1, H2, and H3 in Figure 1.

Leadership style (LS), Creative innovation (CI), Digital transformation (DT), Business efficiency (BE)

Leadership style has a strong influence on employee behaviour, creativity, and decision-making. Open, empowered, and encouraging managers may help employees feel comfortable proposing new ideas without fear of rejection (Schrieck et al., 2024). Innovation-focused executives encourage personnel to try new things and collaborate across divisions. This leadership eliminates capitalism and the fear of failure that hinders staff innovation (Suhandiah et al., 2023). Leadership is essential for commercial banks to innovate services, products, and technology. Without effective leadership, employees may struggle to be creative. This theory suggests that supportive leadership might encourage innovation. Leading organisations through technological change. Therefore, the authors proposed hypotheses H4, H5, and H6 in Figure 1.

Corporate culture (CC), Creative innovation (CI), Digital transformation (DT), Business efficiency (BE)

Company culture impacts employee collaboration and conduct—performance, integrity, and accountability foster discipline and productivity. When employees share a company's mission and values, operations run more smoothly (Kaur et al., 2024). Banking requires precision, homogeneity, and excellent service. Positive cultures foster departmental cooperation, reduce resistance to change, and promote growth. The study found that employees are more likely to try new things, change their behaviour, and experiment with processes in this atmosphere. Seeing growth makes people less likely to quit. Risk-averse or restrictive cultures can hinder digital transition (Ozili & Ndah, 2024). This theory suggests that digital change requires cultural flexibility. Therefore, the authors proposed hypotheses H7, H8, and H9 in Figure 1.

Financial capacity (FC), Creative innovation (CI), Digital transformation (DT), Business efficiency (BE)

A company's financial competency is its ability to allocate and manage financial resources for strategic goals. Financial innovation frequently involves knowledge, digital resources, and infrastructure. Wealthy companies can innovate by taking risks (Zhu & Jin, 2023). Financial capacity funds projects that test new services, technology, or operations. Financially stable banks encourage employee creativity and fund industrial breakthroughs; innovation financing is crucial. New platforms, staff training, and infrastructure upgrades make digital transformation expensive (Rakshit, 2023). Financially solid organisations can improve

investment management and digital project completion. Therefore, the authors proposed hypotheses H10, H11, and H12 in Figure 1.

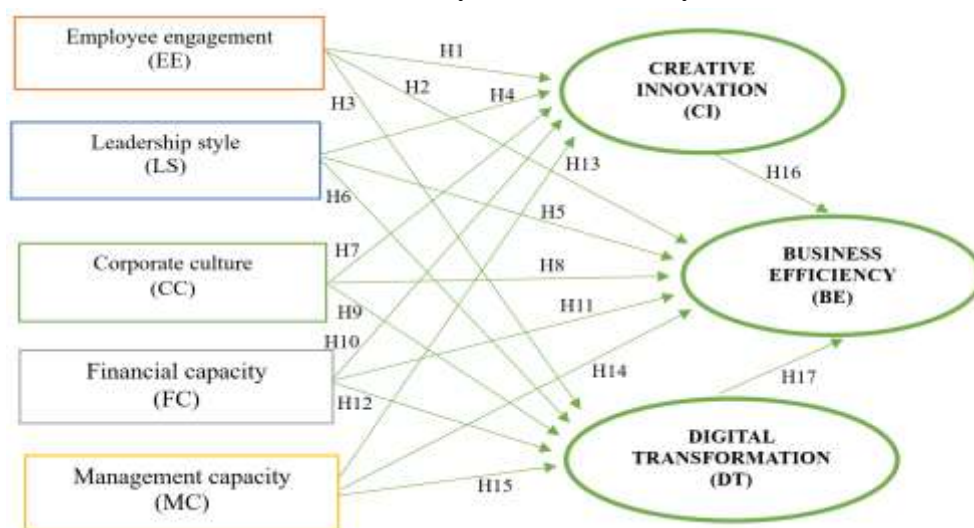
Management capacity (MC), Creative innovation (CI), Digital transformation (DT), Business efficiency (BE)

Process optimisation and resource allocation are key to good management. Banks need skilled managers to provide accurate, timely, and compliant services. Departments are coordinated, performance is evaluated, bottlenecks are detected, and solutions are executed quickly (Rakshit, 2023). Service is faster, cheaper, and better. Managers lacking key skills may delay, waste, or demotivate their teams. This hypothesis claims management skills directly impact bank efficiency at all levels (Cieslak & Valour, 2025). Poor management can create system breakdowns or cost overruns. This concept demonstrates that practical management skills drive digital transformation. Therefore, the authors proposed hypotheses H13, H14, and H15 in Figure 1.

Impacting creative innovation (CI) and digital transformation (DT) on Business efficiency (BE)

Company techniques improve with creative innovation. Banking innovation enhances services, goods, and processes (Vahdat, 2022). Continuous employee and leader innovation cuts costs and enhances productivity. According to this hypothesis, innovation increases business performance and operational efficiency (Molla et al., 2023). Digital tools automate, improve data quality, and enhance user experience. Digital operations enable banks to serve customers more efficiently, manage risk more effectively, and minimise errors (Azmi et al., 2024). Digital transformation enhances the performance of modern banking businesses, according to this notion. Therefore, the proposed hypotheses H16 and H17 in Figure 1.

Following the foregoing analysis, the study presents and analyses 17 hypotheses (H1–H17) linking five internal organisational characteristics to creative innovation (CI), digital transformation (DT), and business efficiency. The hypotheses are presented clearly and systematically below. The research model is in Figure 1. The crucial factors affecting commercial banks' business efficiency are illustrated by this SEM model.



Source: The authors proposed the model

Figure 1: A research model for critical factors influencing business efficiency

Figure 1 illustrates the conceptual research model, which links five internal organisational factors —employee engagement, leadership style, corporate culture, financial capacity, and managerial capacity —to business efficiency, with creative innovation and digital transformation serving as mediating variables. The model depicts 17 proposed paths that represent both direct and indirect linkages. It emphasises how internal capabilities promote innovation and digital preparedness of commercial banks, resulting in increased business efficiency.

Research methods

The research process was conducted in two phases: (1) qualitative exploration through expert consultation and (2) a formal quantitative survey for hypothesis testing in Figure 2.

Qualitative phase based on expert interviews: To explore and refine the research constructs, a qualitative phase was conducted through in-depth discussions with 30 banking experts. These participants were selected based on their extensive professional background, with at least 10 years of management experience in the commercial banking sector. Experts were drawn from 10 leading commercial banks across five centrally governed cities (Hanoi, Ho Chi Minh City, Da Nang, Can Tho, and Hai Phong) and five provinces known for their banking activity (Binh Duong, Dong Nai, Quang Ninh, Nghe An, and Thua Thien Hue). The interviews focused on validating the conceptual model, identifying key influencing factors of innovation, digital transformation, and business efficiency, and adjusting the survey instrument for contextual relevance. Insights gathered from these expert consultations informed the development of the official survey questionnaire used in the quantitative phase (Hair et al., 2018). The authors clearly described the study questionnaire, providing sufficient detail to respondents. They stated what data would be collected, how it would be anonymised and preserved, and explained how the data and written results would be used for policy recommendations.

The quantitative phase is based on a four-step research process.

Step 1: The study utilised a stratified random sample technique to guarantee that it covered a wide range of geographies and banking organisations. Staff vs. management divisions, bank size, and geographical location were the three main factors that determined employee stratification. Thirty commercial banks from four economically dynamic provinces (e.g., Dong Nai and Quang Ninh) and five cities with central government (e.g., Hanoi and Ho Chi Minh City) made up the sample. Depending on their branch network and staffing size, each selected bank supplied anywhere from twenty to fifty responses. Equal representation at all levels and in all functional departments was guaranteed by this method. A sample size of 1.000 was targeted to ensure robust structural equation modelling (SEM) analysis. A total of 942 replies were kept after data cleansing and validation, giving a response rate of 94.2%. Subgroup analysis by area, position, and management level is made possible, and an evenly distributed sample, which increases the study's generalizability and boosts the external validity of the findings (Hair et al., 2018).

Step 2: Instrument development and operationalisation of constructs: A structured questionnaire, serving as the measurement tool, was created by combining existing scales from previous research, and the concepts were then operationalised. The five variables operationalising each concept were measured on a five-point Likert scale, with 1 representing severe disagreement and 5 representing strong agreement. The survey included concepts related to leadership style, company culture, financial resources, managerial abilities, innovative thinking, digital transformation, and operational efficiency. The questionnaire was initially developed in English, then translated into Vietnamese, and subsequently back-

translated to verify accuracy. This process ensured that the concepts and meanings were clearly conveyed. Academics and professionals in the field checked the instrument's content validity and contextual relevance. At this point, we verified that the models accurately reflected the operations of commercial banks.

Step 4: Confirmatory Factor Analysis (CFA) was performed using SPSS 20.0 and AMOS to evaluate the reliability and validity of the components. With Composite Reliability (CR) and Cronbach's alpha values exceeding 0.70, all structures demonstrated robust internal consistency. Consistent validity was demonstrated by AVE values greater than 0.50 and standardised factor loadings greater than 0.60. The use of the Fornell-Larcker criterion verified the discriminant validity. Structural Equation Modelling (SEM) was able to test hypothesised correlations after these results verified the measurement model. The model fit indices (CFI, TLI, RMSEA) were all within the required range, indicating that the structural framework is robust.

Results

Demographic information of respondents based on the sample

Age: The majority of respondents, 52.0%, fall within the 35–45 age bracket, with 15.9% in the 45+ age bracket. Only 32.1% of the population falls into the younger age brackets (18–25 and 25–35). This age distribution is indicative of a seasoned staff that has worked its way up the corporate ladder, possessing extensive experience in banking. Workers who have been around longer tend to be more resilient in the face of adversity and may react differently to leadership styles and cultural influences. With a wide range of ages represented, the model is better able to capture diverse perspectives on digital innovation and company efficiency across different generations.

Monthly income: The income profile indicates that 73.3% of respondents earn over 15 million VND per month, with nearly equal distribution between the 15–20 million and above 20 million categories. This indicates that the sample includes mid-to-senior-level banking staff, which strengthens the reliability of their insights on managerial and strategic issues. Higher income levels also correlate with greater exposure to innovation and digital initiatives. Income stability may influence employee engagement and readiness to support organisational transformation.

Testing critical factors influencing the business efficiency of commercial banks

Table 1: *Testing of Cronbach's alpha for factors influencing the business efficiency*

Items	Cronbach's alpha	Mean	Std. Deviation
Employee engagement (EE)	0.927	3.048	1.013
Leadership style (LS)	0.901	3.320	0.980
Corporate culture (CC)	0.942	3.075	1.008
Financial capacity (FC)	0.909	3.045	0.986
Management capacity (MC)	0.856	3.399	0.941
Creative innovation (CI)	0.861	3.288	1.009
Digital transformation (DT)	0.864	3.294	1.006
Business efficiency (BE)	0.830	2.385	0.665

Source: own calculations in SPSS 20.0.

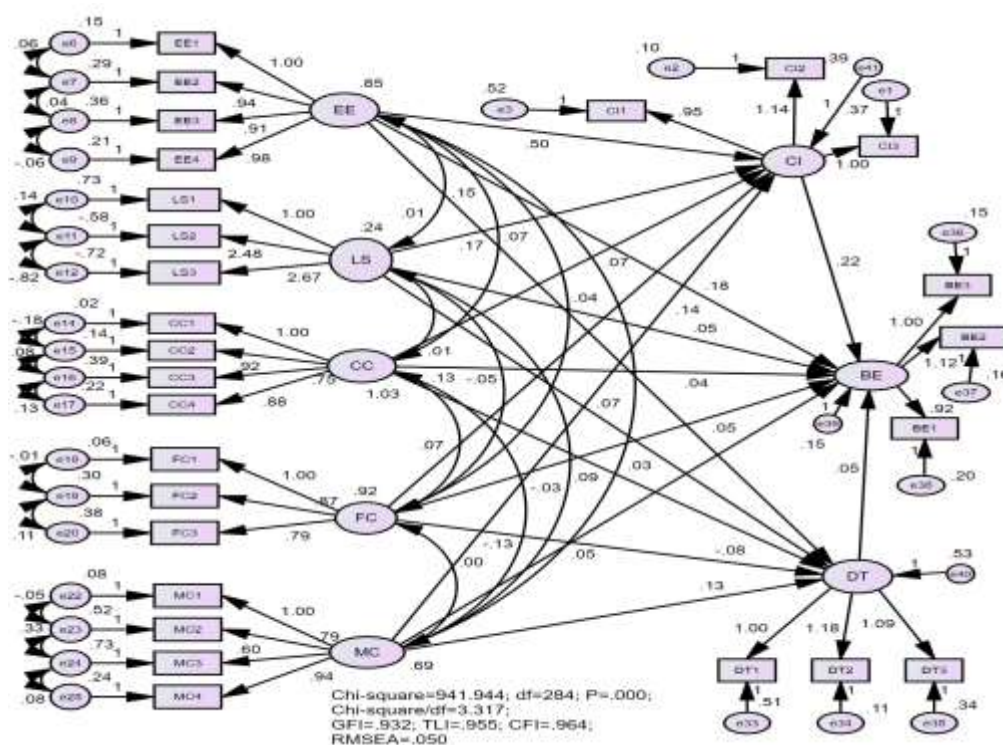
Table 1 presents the descriptive statistics and reliability of each construct, ranging from 0.830 for business efficiency to 0.942 for corporate culture. Cronbach's alpha scores indicate high levels of internal consistency across all variables. Standard deviations reveal that respondents' opinions of the organisational elements impacting innovation, transformation, and efficiency in commercial banks are variable, but mean scores imply reasonable agreement.

Table 2: Testing the SEM model for factors influencing business efficiency

Relationships			Standardized Estimate	S.E	C.R	P	SE-Bias	Result
EE	→	DT	0.208	0.029	5.887	***	0.001	Accepted H3
LS	→	DT	0.047	0.033	2.222	0.026	0.007	Accepted H6
CC	→	DT	0.116	0.025	3.447	***	0.003	Accepted H9
FC	→	DT	0.100	0.028	2.825	0.005	0.004	Accepted H12
MC	→	DT	0.139	0.033	3.877	***	0.002	Accepted H15
EE	→	CI	0.574	0.030	16.838	***	0.002	Accepted H1
LS	→	CI	0.044	0.029	2.437	0.015	0.002	Accepted H4
CC	→	CI	0.090	0.022	3.201	0.001	0.004	Accepted H7
FC	→	CI	0.086	0.025	2.867	0.004	0.001	Accepted H10
MC	→	CI	0.142	0.030	4.658	***	0.003	Accepted H13
EE	→	BE	0.314	0.023	7.731	***	0.001	Accepted H12
LS	→	BE	0.043	0.019	2.330	0.02	0.005	Accepted H5
CC	→	BE	0.072	0.015	2.462	0.014	0.002	Accepted H8
FC	→	BE	0.101	0.017	3.173	0.002	0.004	Accepted H11
MC	→	BE	0.085	0.020	2.694	0.007	0.003	Accepted H14
DT	→	BE	0.068	0.022	2.120	0.034	0.001	Accepted H17
CI	→	BE	0.349	0.027	8.345	***	0.001	Accepted H16

Source: processed from SPSS 20.0, Amos, Note *** significance at 0.01.

Table 2 indicates that all seventeen predicted associations were found to be statistically significant and summarises the structural equation modelling (SEM) findings. The most critical impacts on inventiveness and company effectiveness came from employee engagement and managerial capability. Digital transformation was a weak but substantial mediator, bolstering the model's validity; creative innovation had the most considerable direct influence on company efficiency.



Source: processed from SPSS 20.0, Amos

Figure 2: Testing SEM for factors influencing the business efficiency of commercial banks

Figure 2 depicts internal organizational characteristics, creative innovation, digital transformation, and business efficiency of the tested structural equation model, which also shows the critical paths among these variables. The robustness of the suggested theoretical framework is confirmed by the model fit indices (RMSEA = 0.050, GFI = 0.932, and CFI = 0.964).

Table 3: Testing average Variance extracted for factors influencing the business efficiency

Code	CR	AVE	MSV	Results
CI	0.863	0.682	0.346	Good
CC	0.944	0.809	0.055	Good
EE	0.930	0.769	0.343	Good
MC	0.871	0.632	0.026	Good
FC	0.919	0.790	0.023	Good
LS	0.880	0.713	0.023	Good
DT	0.957	0.886	0.038	Good
BE	0.818	0.602	0.346	Good

Source: Author's own work

Table 3 presents the Testing for construct validity, the convergent validity (AVE > 0.51), and composite reliability (CR > 0.81) of all good constructs. The discriminant validity is confirmed

as each construct's AVE is greater than its maximum shared variance (MSV). The measuring approach is supported by digital transformation, which displays the highest AVE.

Discussion of findings

Vietnamese commercial banks were the subjects of this study, which sought to determine how internal organisational capacities affected creative innovation, digital transformation, and, finally, company efficiency. The proposed model is well-supported by the empirical data derived from structural equation modelling (SEM). All seventeen hypothesised associations were determined to have statistical significance.

After examining five different organisational characteristics, employee engagement (EE) was found to be the most important one. It showed a moderate impact on digital transformation ($\beta = 0.208$), a significant impact on creative innovation ($\beta = 0.574$), and a moderate effect on business efficiency ($\beta = 0.314$). This lends credence to the conclusions drawn (Meng & Imran, 2024; Ullah & Azeem, 2024; Ozili & Ndah, 2024) that employees' motivation, dedication, and adaptability play a pivotal role in encouraging innovation and improving organisational performance.

The importance of creative innovation (CI) in the performance of modern banks was highlighted when it was found to be the strongest direct predictor of business efficiency ($\beta = 0.349$). CI directly improves both operational agility and differentiation, and it also mediates the relationship between internal causes and outputs. Digital transformation (DT) remains a significant mediating factor, particularly when supported by management and financial capabilities, despite having a more minor direct impact on corporate efficiency ($\beta = 0.068$). Consistent with earlier studies (Li et al., 2024; Azmi et al., 2024; Molla et al., 2023), this confirms that technology, in conjunction with human and organisational preparation, is strategically important. In turn, both innovation and transformation significantly enhance business efficiency. The findings also confirm the mediating roles of creative innovation and digital transformation in linking internal capabilities to performance outcomes. All 17 hypothesised relationships were supported, validating the strength of the conceptual framework.

These results underscore the importance of building internal strengths to foster innovation and digital readiness, providing strategic insight for bank leaders aiming to improve operational performance through organisational transformation (Cieslak & Valour, 2025). Finally, the role of organisational capabilities in driving creative innovation, digital transformation, and business efficiency is based on evidence from commercial banks in Vietnam. Highlights the study's contribution to understanding organisational drivers of innovation and transformation, which is the fundamental core of the work. The findings show that innovation and transformation are not just technical results, but rather have their origins in processes that are people-centred and driven by capabilities. This validates the conceptual model. Successfully using digital transformation to boost company performance should be a priority for emerging economy banks. This may be achieved by enhancing employee engagement, leadership development, and managerial capacity.

Conclusions and Policy Recommendations

Conclusions

Within the framework of commercial banks in Vietnam, this research sought to understand how internal organisational capacities affected innovative thinking, digital transformation, and business efficiency. The results, based on data from 942 banking professionals and obtained through structural equation modelling (SEM), validated the hypothesis that innovation and digital transformation processes are substantially influenced by leadership style, corporate culture, financial capability, management capacity, and employee engagement. The most important of them was staff involvement, which increased both creativity and business efficiency. Creative innovation is crucial for competitive and flexible banking operations, since it has the most substantial direct impact on performance results. Although digital transformation had some positive effects, they were less significant and were mainly mitigated by internal preparation. Building strong internal capabilities that encourage innovation and promote change is more important than adopting technology alone for sustained efficiency in the banking sector, according to the report. Together with digital initiatives, human-centred strategies and competence development must be prioritised, according to these results. Banks may enhance their operational performance in the long run and successfully navigate transformation if they prioritise organisational culture, leadership, and resource mobilisation.

Policy Recommendations

The findings offer both theoretical enrichment and practical guidance for transformation strategies in developing economies. Based on the results, the authors suggested five policy implications regarding the business efficiency of commercial banks.

(1) Improve employee engagement (EE) - Banks continue encouraging employee engagement as a core competency, which should be the first step for banks seeking long-term efficiency. Recognising that human capital is a crucial strategic asset in the digital era, policymakers may think about providing industry guidelines or incentives for engagement-focused practices. Finally, banks promote participative culture, recognition systems, and regular feedback to strengthen motivation, innovation, participation, and organisational commitment.

(2) Improve creative innovation (CI) – Encouraging banks to invest in innovation capacity through tax incentives, regulatory sandboxes, or national innovation programs can drive systemic improvements across the sector. Innovation also serves as a critical mechanism through which other internal factors (employee engagement, management capacity, culture) translate into tangible business results. Building innovation capability is both a means and an end for banking efficiency. Finally, banks establish innovation labs, cross-functional teams, and experimentation frameworks to translate ideas into scalable banking solutions.

(3) Improve management capacity (MC) – Bank associations and regulators can help raise management standards across the sector by providing resources, including training and certification programs and benchmarking tools. Strategic alignment, technology adoption, and competent management all work hand in hand to make a company more efficient over the long term. Scale automation and AI to reduce costs and increase productivity by accelerating the adoption of automation and machine learning tools, and by scaling AI and deploying large

language models to create additional efficiencies and cost savings.

(4) Improve financial capacity (FC) – Combining financial measures with performance evaluation further assures effective and efficient use of resources. Government agencies and central banks can offer low-interest programs, financial innovation loans, fintech assistance funds, and matching grants to support digital modernisation projects. A solid financial foundation should underpin all other transformation initiatives because it reduces vulnerability and increases responsiveness.

(5) Improve corporate culture (CC) – Implications for policymaking include using organisational culture evaluations as part of industry standards or performance reviews for supervisors. Through forums that exchange sector-wide successful cultural transformation stories, prizes, and recognition programs, regulators can encourage optimal practices. Building a banking culture that is committed to innovation is a core element. Commitment from the bank's leadership is significant; they must clearly demonstrate their innovation strategy and vision to motivate all employees.

(6) Improve leadership style (LS) – Banks build a professional digital banking leader who needs strategic thinking, technological skills, and people management. Leaders must inspire and empower staff to create while being flexible, creative, and digitally savvy. Leadership should prioritise customers, experimentation, and taking calculated risks. Additionally, digital skills, data analysis, thinking, and quick adaptation must be developed. Digital banking leaders drive and transform corporate culture to achieve complete and effective digitisation. In particular, networking activities such as workshops, team-building exercises, and performance evaluation programs based on contributions to innovation will enhance employee solidarity and commitment.

(7) Improve digital transformation (DT): Investment in staff training, digital leadership, and change management programs can reduce resistance and increase adoption. Furthermore, banks should prioritise customer-centric digital platforms, ensure data integration across functions, and adopt agile project management methods to rapidly and effectively implement digital initiatives. Finally, banks invest in employee digital training, agile implementation methods, and integrated platforms to accelerate service modernisation.

Limitations and future research: Despite its meticulous technique and firm empirical conclusions, the study has significant limitations: Social desirability bias may impair self-reported questionnaires on sensitive themes, including leadership, innovation, and managerial performance. We measured reliability and validity, but future studies could utilize performance indicators or third-party assessments. Assessing internal factors: Organizational abilities are prioritized over market competition, customer behavior, and regulations. Internal capability and traits may impact innovation and performance. Given these limits, future research should focus on external variables to enhance research. Consider incorporating factors such as technology turbulence, market competitiveness, and customer expectations to analyze company performance. Internal-external forces can be examined via dynamic models.

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