The impact of digital transformation on job performance: The mediating role of job satisfaction and work pressure

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ABSTRACT

This study evaluates the impact of Digital Transformation on Job Performance. The authors use a quantitative research method with survey data from 242 lecturers across various faculties and universities in Ho Chi Minh City. Using Smart PLS software to analyze the data, the research findings indicate that Digital Transformation directly impacts Job Performance and indirectly impacts Job Performance through two channels with an adjusted R2 value of 0.278. The first channel is that universities investing in Digital Transformation will lead to higher Job Satisfaction, and the increase in Job Satisfaction will lead to higher Job Performance. The second channel is that universities investing in Digital Transformation will reduce Work Pressure, and the decrease in Work Pressure will lead to higher Job Performance. Based on the research results, the authors provide managerial implications for enhancing digital transformation in universities and improving the job performance of lecturers.

1. Introduction

Digital transformation is a global trend driving socio-economic development and bringing profound changes across all sectors, notably higher education. Digital transformation integrates technology into all organizational activities to change operations, improve work efficiency, and create new value (Shwedeh et al., 2023). Investing in digital transformation can improve business performance. However, investing in digital transformation always comes with the cost of investing in hardware, software, and employee training. Therefore, businesses and researchers are concerned about whether investing in digital transformation enhances job and firm performance.

Digital transformation in higher education institutions has gained significant momentum in recent years, particularly following the Covid-19 pandemic, which underscored the necessity of online learning (Tran, 2023). All over the world, Universities have increasingly integrated information technology into their operations, including administration, teaching, education, and research. Online learning platforms such as Moodle, Google Classroom, and Microsoft Teams have been widely adopted, offering diverse, flexible learning options for faculty and students. Moreover, many institutions have implemented Learning Management Systems (LMS) and student management software while applying technology to streamline administrative processes such as admissions, remote education, and internal communications.

In Vietnam, higher education has challenges such as overcrowded classrooms, low productivity, and a mismatch between academic programs and industry needs (Nguyen et al., 2021). Digital transformation offers a pathway to address these issues by enhancing the accessibility, efficiency, and quality of education. With high internet penetration and widespread smartphone usage, Vietnam is well-positioned to adopt digital solutions in higher education. The government has recognized this potential, as reflected in Decision No. 749/QD-TTg, which introduces a program for national digital transformation by 2025 with an orientation towards 2030 (Vietnamese government, 2020). This program emphasizes digital transformation as a key driver of socio-economic development, including education (p.15).

Digital transformation has the potential to improve lecturer performance. However, there is little research to quantify the impact of digital transformation on lecturer performance. Previous studies often focused on manufacturing and service enterprises. Guzmán-Ortiz et al. (2020) analyzed the impact of digital transformation on individual job performance in insurance companies in Peru. The result showed that digital transformation affected job performance. Another research conducted in Indonesia indicated that digital transformation and remote working positively affected job performance in the service sector while emphasizing the role of motivation and the work environment (Veithzal, 2023). Nurcaya et al. (2022) analyzed the role of information technology in enhancing the performance of SMEs during the Covid-19 pandemic. Their research concluded that information technology is a critical support factor of firm performance. Cinquini and Mauro (2023) analyzed the relationship between digitization, job performance, and management in higher education. The author used qualitative methods and demonstrated that digital tools improve learning outcomes and measure university performance.

Previous studies primarily concentrate on businesses or industries, with little attention given to higher education. After reviewing previous studies, the authors find that the impact of digital transformation on lecturers' job performance has not been fully explored, particularly in emerging countries like Vietnam (Nguyen et al., 2023). This study aims to investigate the impact of digital transformation on job performance in higher education in Vietnam. Firstly, the study analyzes the direct impact of digital transformation on job performance. Secondly, the study examines the indirect impact of digital transformation on job performance through the mediating effects of job satisfaction and work pressure. Finally, the study will propose some managerial implications for enhancing digital transformation and improving the work performance of lecturers at universities.

In globalization and digitalization, this research contributes to developing higher education. Theoretically, this study clarifies the mechanism of the impact of digital transformation on lecturers' job performance. This mechanism includes the direct impact of digital transformation on job performance and the indirect effects of job satisfaction and work pressure. In the practical aspect, the study proposes solutions for implementing digital transformation in higher education and enhancing the job performance of lecturers in Vietnam. Besides, the study also proposes solutions to improve job satisfaction and reduce work pressure through digital transformation activities. This paper is structured into five sections. Following the introduction, the second section addresses the theoretical framework and research hypotheses, the third section outlines the research methodology, the fourth section presents the research findings, and the final section concludes the study.

2. Theoretical framework

2.1. Literature review

Digital transformation has emerged as an inevitable trend, exerting profound influence across various domains such as education, business, and organizational management (Shwedeh et al., 2023). Recent studies have investigated the factors shaping digital transformation outcomes, albeit within different contexts. Nguyen (2023) examined the factors influencing the intention to implement digital transformation in primary schools in the mountainous regions of Northern Vietnam. The study emphasized the pivotal roles of strategic planning, implementation conditions, technological capabilities, deployment measures, and operational objectives. The findings revealed that these factors strongly impact the willingness to adopt digital transformation in educational settings. In higher education, Cinquini and Mauro (2023) analyzed the influence of digitalization on operational performance, highlighting that digital tools can enhance students' learning outcomes while improving institutional management efficiency.

Nguyen et al. (2023) investigated the readiness for digital transformation among employees in Vietnam's Small and Medium Enterprises (SMEs). The research identified self-confidence, attitudes, leadership capabilities, and employee characteristics as critical determinants of work efficiency in digital transformation. Guzmán-Ortiz et al. (2020) corroborated these findings, demonstrating that digital transformation significantly enhances individual job performance in Peruvian insurance companies. Improvements were noted in competencies, customer experience, processes, and business models.

Furthermore, Ramos-Villagrasa et al. (2019) proposed a comprehensive framework for measuring individual work performance, encompassing task performance, contextual performance, and counterproductive work behaviors. This framework has been widely adopted in subsequent studies. In Indonesia, Veithzal (2023) and Komari (2023) explored the effects of job pressure and workplace environment on employee performance. Their findings underscored the positive roles of digital transformation and motivation while highlighting that excessive job pressure may diminish job satisfaction and performance.

Nurcaya et al. (2022) analyzed the role of information technology in enhancing the performance of SMEs during the Covid-19 pandemic. Their research concluded that IT functions as a critical support factor. Lastly, Vo et al. (2024) emphasized that organizational readiness and innovation directly influence digital transformation and indirectly enhance organizational performance. This result reinforces that digital transformation is a technological advancement imperative for strategic organizational management.

In conclusion, the previous studies confirmed that digital transformation significantly impacted job performance. Previous research has often been conducted in the context of enterprises, but few studies have been conducted in the context of higher education. The authors found the research gap and proposed research hypotheses and models based on the literature review. The research hypotheses and research model will be presented in the next section.

2.2. Research hypotheses and model

According to Raed et al. (2023), using digital tools in business activities, artificial intelligence, and digital leadership positively impacts job satisfaction and performance. Digital transformation involves changes in processes and the development of business models, contributing to increased employee satisfaction. Job satisfaction, which includes

business success, commitment, and engagement, is directly related to the value employees contribute to the organization. According to Davis's Technology Acceptance Model (TAM) (1986), technology that meets user needs enhances satisfaction. Based on this evidence, the following hypothesis is proposed.

H1: Digital transformation positively impacts job satisfaction

Digital transformation is a prerequisite for organizational change. Nurcaya et al. (2022) concluded that information technology variables are critical to job performance. Digital transformation positively affects business performance (Nguyen, 2024; Veithzal, 2023). Shwedeh et al. (2023) confirmed that organizational digital transformation positively affected employee performance. Employees with knowledge of digital transformation will handle work more effectively, leading to higher job performance. Then, the authors proposed the following hypothesis.

H2: Digital transformation positively impacts job performance

Ling et al. (2023) examined the impact of digital transformation in smart cities on urban employment pressure. Results show that digital transformation in smart cities reduces employment pressure through technological upgrades, resource optimization, and industrial transformation. The study highlights heterogeneous effects based on city characteristics, firm types, and workers' education levels, offering insights into optimizing digital transformation policies to promote sustainable development. Then, the authors proposed this hypothesis.

H3: Digital transformation negatively impacts work pressure

The relationship between job satisfaction and job performance is a well-established topic in the literature. Alferaih (2017) and Manik et al. (2023) have demonstrated that job satisfaction positively influences work performance. Employees who are satisfied with their jobs will work harder, leading to higher work performance. Similarly, Khuc (2024) highlighted a positive relationship between job satisfaction and employee performance. Based on these findings, the hypothesis H4 is proposed.

H4: Job satisfaction positively impacts job performance

According to Payne and Fletcher (1983), work pressure arises from an imbalance between job demands, support, and constraints, negatively affecting work outcomes, noting that external organizational factors also contribute to work pressure. Komari (2023) pointed out that work pressure negatively affects employee satisfaction. Similarly, Yang et al. (2021) confirmed that job stress negatively impacted performance. So, the study proposed the H5 hypothesis.

H5: Work pressure negatively impacts job performance

When implemented effectively, digital transformation can potentially restructure workflows, innovate products and services, and enhance job satisfaction and performance (Mithas et al., 2013; Nwankpa & Roumani, 2016). However, digital transformation can also create pressure on employees lacking skills, leading to unemployment risks and reduced job performance (Beehr & Newman, 1978; Nguyen, 2021). Then, the study proposed the following hypotheses.

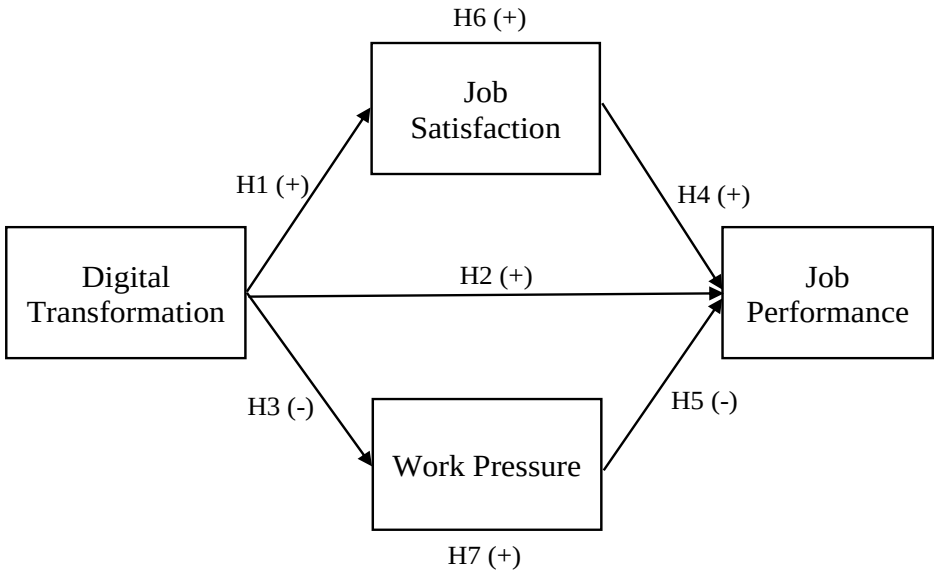
H6: Digital transformation positively impacts job performance through the mediating variable of job satisfaction

H7: Digital transformation positively impacts job performance through the mediating variable of work pressure

Based on the hypotheses, the authors propose the research model of the study as follows:

Figure 1

Research Model Proposed by Authors



Note. Compiled by authors

3. Methodology

In this study, the authors use quantitative research methods. Based on the review of previous studies, the study determines the research gap and research model. Based on previous studies and regulations of the Ministry of Education and Training, the authors define the main scale of the research model. From the scale, the authors design a questionnaire and conduct a survey. The collected data is processed using SmartPLS software, and the research hypotheses are tested using the PLS-SEM (Partial Least Squares Structural Equation Modeling) method.

The authors chose the PLS-SEM method because it has several advantages over traditional methods like Covariance-Based SEM (CB-SEM) or regression analysis. PLS-SEM is particularly suited for analyzing complex, multi-layered relationships in technological integration, organizational culture, and employee adaptability, which are central to digital transformation. Compared to CB-SEM, which emphasizes model fit, PLS-SEM focuses on maximizing explained variance and is better suited for exploratory studies with predictive objectives (Nguyen et al., 2024). This method makes it ideal for examining how digital transformation initiatives directly or indirectly influence job performance. Additionally, PLS-SEM can handle small sample sizes and non-normal data, which might challenge CB-SEM's stringent requirements (Hair et al., 2016).

Unlike traditional regression methods, PLS-SEM captures latent variables, representing abstract concepts like digital transformation readiness, job performance, and their relationships. Regression, in contrast, is limited to observable variables and cannot model mediating or moderating effects effectively. By utilizing PLS-SEM, researchers gain flexibility in modeling reflective and formative constructs, ensuring robust analysis of digital transformation's multi-dimensional effects on job performance. This method's predictive power and adaptability make it a preferred tool for uncovering actionable insights in evolving organizational landscapes (Hair et al., 2016).

3.1. The formulation of scale

To develop the scale for this study, the authors grounded our framework on several previous studies related to the research topic. These include Kuo et al. (2022) and "A set of Indicators and Criteria for Evaluating the Digital Transformation of Higher Education Institutions" issued under Decision No. 4740/QD-BGDDT by the Ministry of Education and Training (2022), which served as the foundation for the Digital Transformation (DT) scale. Phan et al. (2021) informed the development of the Job Satisfaction (JS) scale. Komari (2023), Tran and Truong (2019), and Pham et al. (2021) contributed to the Work Pressure (WP) scale. Meanwhile, the Job Performance (JP) scale was adapted from the studies of Ramos-Villagrasa et al. (2019) and Pham (2024).

Furthermore, the authors refined the selection of appropriate scales by consulting experts, including instructors involved in teaching processes and specialists in information technology. To enhance the scale's reliability, the authors conducted a pre-test for reliability using a small sample before the official survey. The survey is divided into two sections: demographic information and core content. Specifically, the demographic information section gathers basic data about the participants, including gender, age, highest academic degree or title, teaching field, and the educational institution where the instructor is currently employed. In the core content section, the authors used a five-point Likert scale to measure instructors' levels of agreement with the survey statements, ranging from 1 (strongly disagree) to 5 (strongly agree).

3.2. The data collection method

The authors employed convenience sampling to conduct the sampling for this study. Data were collected through an online survey by Google Forms and a face-to-face survey. The survey link was sent to university lecturers in Ho Chi Minh City. The authors also conducted a study directly using a printed questionnaire. To minimize the bias in convenience sampling, the author selected two public universities and two private universities as the main survey objects. The chosen universities include Ho Chi Minh City University of Technology and Education, Ho Chi Minh City University of Economics, Gia Dinh University, and Van Hien University. The study selected universities in Ho Chi Minh City because this is the largest city in Vietnam and has the most universities in Vietnam. In addition, the study aimed to survey at least 40 observations in each university to reduce the number of observations focused on a particular university. At the same time, the remaining universities had too few observations. Finally, to minimize the bias when using convenience sampling, the author increased sample diversity by intentionally including participants from varied demographics, including gender, age, education level, and teaching field. Details of demographics are presented in Table 1.

The minimum sample size for a quantitative study is calculated by multiplying the total number of observed variables by 05, as Hair et al. (2013) suggested. With 20 observed variables, this study's minimum required sample size would be 100 observations (20 x 05). However, given the scope of this study, 100 observations were considered insufficient to ensure reliability. To account for potential invalid responses and enhance the sample's representativeness, the authors surveyed 300 lecturers in Ho Chi Minh City. A total of 271 responses were received, and after screening for invalid responses, 242 valid responses (89.3% of the total) were retained for the official quantitative analysis. Details of the data collection are presented in Table 1.

Table 1

The Descriptive Statistical Results of Research Samples

Attribute		Frequency (number of people)	Proportions (%)
Gender	Male	139	57.4
	Female	103	42.6
	Total	**242**	**100**
Age Group	Under 30 years old	45	18.6
	30 to under 40 years old	90	37.2
	40 to under 50 years old	80	33.1
	50 years old and above	27	11.2
	Total	**242**	**100**
Education Level	Master Degree	148	61.2
	Doctorate	86	35.5
	Associate Professor, Ph.D.	8	3.3
	Professor, Ph.D.	0	0
	Total	**242**	**100**
Teaching Field	Natural Sciences	50	20.7
	Engineering - Technology	62	25.6
	Social Sciences	100	41.3
	Humanities	30	12.4
	Total	**242**	**100**
Work Place	Ho Chi Minh City University of Technology and Education	54	22.3
	Ho Chi Minh City University of Economics	45	18.6
	Gia Dinh University	49	20.2
	Van Hien University	50	20.7
	Other universities	44	18.2
	Total	**242**	**100**
Type of University	Public university	131	54.1
	Privite university	111	45.9
	Total	**242**	**100**

Note. The authors analyze and synthesize

Overall, based on the descriptive statistical results of general information collected from 242 lecturers, the characteristics of the research sample and the proportional distribution of each attribute within the surveyed sample align well with the research topic, ensuring reliable research outcomes.

4. Results and discussions

4.1. Result of reliability of the scales

Table 2 presents the internal consistency (Cronbach's Alpha) results for all four measurement scales, which are greater than 0.7. The lowest value is for Work Pressure (0.883), and the highest is for Job Satisfaction (0.914). Additionally, the Composite Reliability (CR) results for all four scales are also greater than 0.7, with the lowest value being Work Pressure (0.915) and the highest being Job Satisfaction (0.933). These results indicate that all proposed measurement scales meet the reliability standards recommended by Hair et al. (2016).

According to Hair et al. (2016), discriminant validity is an essential criterion when assessing the reliability of measurement scales in research models. The AVE (Average Variance Extracted) results in Table 2 are as follows: Work Pressure = 0.683, Job Satisfaction = 0.7, Digital Transformation = 0.714, and Job Performance = 0.717, all greater than 0.5. This result demonstrates that the observed variables exhibit good discriminant validity.

Table 2

Results of The Measurement Model Testing

Items	Cronbach's Alpha	CR	AVE
WP (Work Performance)	0.883	0.915	0.683
DT (Digital Transformation)	0.866	0.909	0.700
JP (Job Performance)	0.901	0.927	0.714
JS (Job Satisfaction)	0.914	0.933	0.717

Note. The authors analyze and synthesize

The discriminant validity is also evaluated based on two indicators: the HTMT and the Fornell-Larcker matrix. Details are presented in Table 3.

Table 3

Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio (HTMT)

Items	HTMT				Fornell - Larcker			
	WP	DT	JP	JS	WP	DT	JP	JS
WP					0.826			
DT	0.265				-0.231	0.845		
JP	0.304	0.507			-0.278	0.450	0.847	
JS	0.282	0.628	0.513		-0.253	0.567	0.465	0.837

Note. The authors analyze and synthesize

For HTMT, the general rule is that values below 0.85 suggest adequate discriminant validity, meaning the constructs are sufficiently distinct (Hair et al., 2016). Based on the data analysis results for the HTMT matrix (where all indices of the measurement pairs are less than 0.85) and the Fornell-Larcker table, it is evident that the observed variables in the proposed measurement model satisfy the requirements for discriminant validity.

4.2. Result of hypotheses testing

The author used the PLS-SEM method to test the research hypotheses in this study. Bootstrapping was applied to evaluate the relationships between latent variables, requiring P-values < 0.05 (95% confidence level) for statistical significance. Results from the multicollinearity check show that all dependent variables have a VIF less than 2, confirming no multicollinearity in regression results. Detailed results are presented in Table 4.

Table 4

Results of The Hypothesis Test

Hypothesis	Impact Relationship	Inner VIF	f^2	Original Sample	P Values	Conclusion
H1	DT → JS	1.000	0.473	0.567	0.000	Accepted
H2	DT → JP	1.492	0.061	0.255	0.008	Accepted
H3	DT → WP	1.000	0.056	-0.231	0.000	Accepted
H4	JS → JP	1.508	0.075	0.283	0.016	Accepted
H5	WP → JP	1.082	0.028	-0.147	0.030	Accepted
H6	DT → JS → JP	-	-	0.160	0.022	Accepted
H7	DT → WP → JP	-	-	0.034	0.038	Accepted

Note. The authors analyze and synthesize

The results in Table 4 show that all p-values are less than 5%, which proves that all seven hypotheses of the research model are supported. Standardized regression coefficients are used to compare the impact of independent variables on the same dependent variable. For Job Performance, three independent variables (Work Pressure, Digital Transformation, and Job Satisfaction) influence it, ranked in ascending order by the absolute value of their standardized regression coefficients: 0.147, 0.255, and 0.283, respectively. This result indicates that Job Satisfaction has the highest impact on Job Performance, while Work Pressure has the lowest impact.

While standardized regression coefficients compare the strength of impacts, the f^2 coefficient provides specific values for these impacts: Digital Transformation affects Work Pressure with $0.02 \leq f^2 = 0.056 < 0.15$, indicating a small effect. Work Pressure affects Job Performance with $0.02 \leq f^2 = 0.028 < 0.15$, indicating a small effect. Digital Transformation affects Job Performance with $0.02 \leq f^2 = 0.061 < 0.15$, indicating a small effect. Job Satisfaction affects Job Performance with $0.02 \leq f^2 = 0.075 < 0.15$, indicating a small effect. Digital Transformation affects Job Satisfaction with $f^2 = 0.473 \geq 0.35$, indicating a significant impact.

To assess the explanatory power of the independent variables on the dependent variable, we examine the value of the adjusted R^2 coefficient through PLS Algorithm analysis.

Table 5

Results of The Adjusted R^2 Value

Items	The adjusted R^2 value
Work Pressure	0.049
Job Performance	0.278
Job Satisfaction	0.318

Note. The authors analyze and synthesize

The results in Table 5 show that The independent variable Digital Transformation explains 4.9% of the variance in the dependent variable Work Pressure; The independent variable Digital Transformation explains 27.8% of the variance in the dependent variable Job Performance. The independent variable, Digital Transformation, explains 31.8% of the variance in the dependent variable, Job Satisfaction.

4.3. Discussions

For the H1 hypothesis, the P-value is less than 0.05, and the standardized regression coefficient (β) is 0.567. This is the highest impact among the seven hypotheses. This result indicates that Digital Transformation positively impacts Job Satisfaction. It is similar to the evidence from the study of Raed et al. (2023). When universities invest in digital transformation, faculty members will work more efficiently through activities such as remote teaching, leading to greater job satisfaction. Digital transformation significantly affects job satisfaction by altering work processes, enhancing flexibility, and introducing new opportunities for skill development. Integrating digital tools can increase job satisfaction by fostering better communication, streamlining workflows, and enabling remote work.

Similarly, Digital Transformation positively impacts Job Performance with a Beta of 0.255 and a P-value of 0.008, less than 0.05. This result is similar to the study of Blanka et al. (2022) from Europe, Peng and Tao (2022) from China, Chouaibi et al. (2022) from Tunisia, and Shwedeh et al. (2023) from UAE. This evidence demonstrates the generalizability of the research results. The studies confirmed that organizational digital transformation positively affects employee performance in many contexts. Digital transformation has significantly influenced university lecturers' job performance by enhancing teaching methods, research capabilities, and administrative efficiency. Advanced technologies like Learning Management Systems (LMS) and virtual collaboration tools enable lecturers to deliver interactive and engaging content, improving student outcomes. Moreover, digital tools streamline administrative tasks like grading and attendance tracking, allowing more time for research and curriculum development.

For hypothesis H3, the P-value is less than 0.05, and the Beta is -0.231, indicating that Digital Transformation negatively impacts Work Pressure. When digital transformation is successfully applied, the workload of lecturers will decrease, thereby reducing work pressure. The above results are also confirmed in the study by Ling et al. (2023), which examined the impact of digital transformation in smart cities on urban employment pressure. Digital

transformation can reduce work pressure for university lecturers by automating repetitive tasks, enhancing resource accessibility, and improving communication efficiency. Technologies such as LMS automate grading, assignment submissions, and attendance tracking, freeing lecturers to focus on more meaningful activities like curriculum development and mentoring.

The result in Table 4 also confirms that Job Satisfaction positively impacts Job Performance at a significance of 5%. The regression coefficient is 0.283. This result supports hypothesis H4. Employees who are satisfied with their jobs will work harder, leading to higher work performance. Manik et al. (2023) had the same result when confirming that job satisfaction positively influences job performance. Satisfied lecturers are more likely to be motivated, engaged, and innovative in their teaching practices, which enhances student learning outcomes. Positive workplace environments and recognition for contributions foster a sense of fulfillment, enabling lecturers to focus on delivering high-quality instruction and conducting impactful research. Conversely, dissatisfaction from workload pressures, inadequate resources, or lack of support can lead to disengagement and lower job performance.

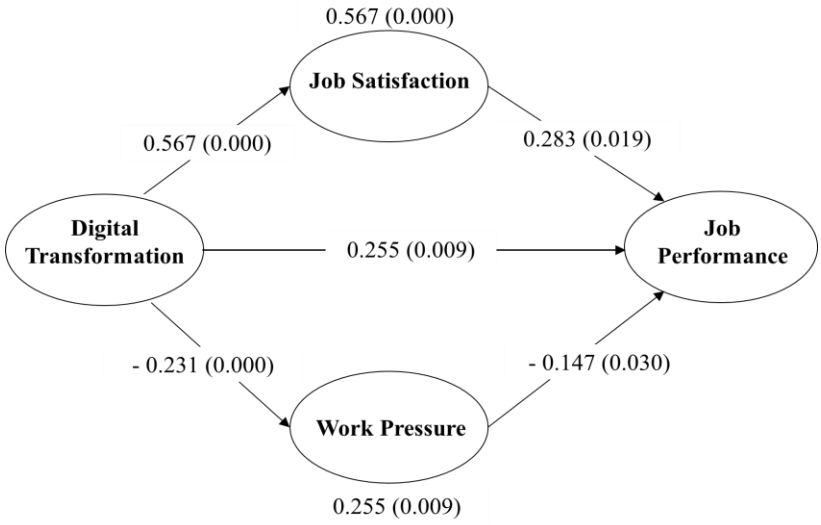
For hypothesis H5, the P-value is 0.030, less than 0.05, indicating statistical significance at a 95% confidence level. The standardized regression coefficient is -0.147. This result supports the hypothesis that Work Pressure negatively impacts Job Performance. This finding is the same as that of Komari (2023) and Yang et al. (2021), who confirmed that stress negatively impacted job performance. Work pressure significantly affects the job performance of university lecturers by reducing their ability to balance teaching, research, and administrative responsibilities effectively. High workloads often lead to stress, burnout, and decreased job satisfaction, negatively impacting teaching quality and research output. Furthermore, prolonged exposure to such stressors may lead to health problems, absenteeism, and a higher turnover rate, affecting the long-term stability of academic institutions.

Finally, the result also confirms the indirect impacts of digital transformation through two channels. The first channel is that universities investing in digital transformation will lead to higher Job satisfaction, and the increase in Job Satisfaction will lead to higher job performance. This result supports hypothesis H6 and is similar to previous studies such as Mithas et al. (2013) and Nwankpa and Roumani (2016). The second channel is that universities investing in digital transformation will reduce Work Pressure, and the decrease in Work Pressure will lead to higher job performance. This result supports hypothesis H7 and is similar to the study of Nguyen (2021). This result explains the impact mechanism of digital transformation on job performance. Digital transformation directly impacts job performance and indirectly impacts this variable by increasing Job satisfaction and reducing Work pressure on lecturers.

Based on the path coefficient analysis presented above to test the relationships between the variables in the model and the proposed hypotheses, it can be concluded that the model and all seven hypotheses suggested by the authors are statistically significant and have sufficient grounds for acceptance. The main contribution of this study is to find the mechanism of the impact of digital transformation on job performance. Digital transformation, directly and indirectly, impacts job performance by mediating job satisfaction and work pressure. The summary of the regression result is presented in Figure 2. The numbers in the arrows are the regression coefficients, and the numbers in parentheses are the p-values.

Figure 2

The Research Model Made by The Authors



Note. The authors analyze and synthesize

5. Conclusions and recommendations

This study evaluates the impact of Digital Transformation on Job Performance. The authors collected data from 242 Ho Chi Minh City lecturers and used SmartPLS to analyze the data. The results show that digital transformation directly and indirectly impacts job performance through two channels. The first channel is that universities investing in digital transformation will lead to higher Job satisfaction, and the increase in Job Satisfaction will lead to higher job performance. The second channel is that universities investing in digital transformation will reduce Work Pressure, and the decrease in Work Pressure will lead to higher job performance. This conclusion holds significant implications for management teams in educational institutions, especially in aligning with broader societal trends and improving lecturers' job performance. Based on these findings, the authors propose the following managerial implications:

First, the data analysis shows that digital transformation substantially impacts job satisfaction. Therefore, administrators can leverage these findings to develop digital transformation initiatives that meet lecturers' needs in educational institutions. The authors suggest several tools to increase job satisfaction and improve job performance through digital transformation, such as enhancing access to high-quality resources, domestic and international scientific research, and integrating these resources into the institution's digital databases. This solution would allow lecturers easy access to online educational resources, digital teaching tools, and specialized software. These initiatives will help lecturers stay updated on new knowledge and teaching methods, thus improving both lecture quality and research output.

Secondly, the data analysis reveals that job satisfaction has a relatively small impact on job performance. This result suggests that lecturers are still required to complete their tasks regardless of satisfaction levels. However, the ultimate goal of job performance is to achieve optimal results. Therefore, increasing lecturer satisfaction can improve job performance speed and quality. In addition to academic resources, lecturers need tools for efficient work management, such as software for tracking teaching schedules, research hours, project scores, community activities, and student progress. Automating and simplifying these processes can

help lecturers manage their workload effectively, allowing them to focus more on teaching and research, ultimately enhancing their job performance. The university can develop and implement a Learning Management System (LMS), such as Moodle or Blackboard, which are software tools that support creating tests, automating grading, and aggregating scores. ChatGPT can assist lecturers in preparing slides, preparing quizzes, and finding helpful information for lectures. Turnitin is an effective tool for plagiarism detection, helping lecturers save time on grading.

Additionally, this software supports grading essays through the Grademark tool, which allows instructors to provide feedback and evaluations directly on students' work while automatically calculating scores based on pre-set criteria. These tools automate the grading process and offer other valuable features, such as tracking learning progress, providing prompt feedback, and effectively analyzing data. By using these software tools, lecturers can save time, increase job satisfaction, and reduce the stress associated with managing teaching responsibilities.

Thirdly, the research shows that digital transformation has a small, negative impact on work pressure. While the effect is not significant, the data suggest that increased use of digital tools can alleviate work pressure for lecturers. This result highlights that implementing digital transformation in the workplace can reduce work-related stress. To achieve this, the institution should organize regular training and provide technical support to ensure lecturers become proficient with digital tools, thus reducing the pressure to adapt to the ever-evolving technological landscape. Nowadays, the development of artificial intelligence is taking place very quickly. Artificial intelligence can support solving tasks for lecturers, such as preparing slides and designing lecture videos. Applying artificial intelligence in teaching will help lecturers reduce work pressure. Additionally, the institution should continuously assess the effectiveness of digital transformation initiatives and make timely adjustments to ensure these solutions are genuinely beneficial and reduce work pressure.

Fourthly, the study reveals that work pressure has a small, negative impact on job performance. While work pressure is not overwhelming, it still negatively affects lecturers' performance. To mitigate this impact and optimize job performance, the authors recommend increasing technological tools to streamline work processes and reduce manual tasks, saving time and reducing the pressure from time-consuming duties. Furthermore, the institution should adjust workload distribution to prevent task overload, ensuring that lecturers are assigned tasks appropriate to their capacity and available time, thus reducing pressure and helping them perform more effectively. The university could assign the IT department to develop a custom management system to digitize all documents and materials from each department and general documents from the university and other regulatory bodies. Additionally, the system could track lecturers' teaching, research, and community activities and be integrated with different tools to provide detailed reports on work progress. This solution would help lecturers manage their time more effectively and allow administrators to easily monitor the workload and progress of each lecturer, thus facilitating more efficient task assignments.

Finally, the average values of observed variables regarding the institution's digital transformation efforts reveal that most lecturers believe the institution has not adequately invested in digital infrastructure and resources for digital transformation. Furthermore, it has not delegated authority to qualified departments or individuals to manage digital transformation activities. The authors propose that the institution designate a central

leadership, such as a digital transformation department, to develop digital transformation criteria tailored to the specific conditions of each department, in line with the Ministry of Education and Training's guidelines. This body should oversee digital transformation efforts, organize regular reports on successful models, and monitor and evaluate the implementation process, providing support and adjustments as needed to ensure maximum effectiveness.

Digital transformation is not a short-term task; it is a long-term process that requires time, coordinated policies, and the capacity for implementation at both the management and operational levels. Therefore, obstacles will inevitably arise during the implementation process. The barriers to digital transformation demonstrate notable differences across higher education levels, particularly between public and private universities and institutions located in different regions. Factors such as financial resources, technological infrastructure, access to training, organizational culture, and policies from regulatory bodies all influence the digital transformation process at educational institutions. While the national digital transformation agenda has been actively pursued in recent years, the policies of educational regulatory bodies may still be unevenly implemented, leading to disparities in the provision of resources and support for institutions in various regions. Public universities may receive more support from the government, whereas private universities and institutions in regional areas may encounter difficulties accessing these policies and support. To mitigate these barriers, more equitable support policies and tailored solutions that address the specific conditions of each type of institution and region are essential. Additionally, technological infrastructure and internet connectivity must be prioritized, particularly in remote areas, where significant challenges and shortages of facilities are necessary for digital transformation.

Within the scope of this research topic, notwithstanding the efforts made by the study to identify new issues, certain limitations still exist, particularly in its inability to fully encompass the diversity of universities in Ho Chi Minh City, with a sample size of only 242 university lecturers. The study focused on only two public universities and two private universities. Besides, this study employs convenience sampling, which can cause bias in the data analysis. Therefore, the authors suggest expanding the study's scope by including more universities in the survey to collect a larger sample size in future research. Additionally, the study recommends broadening the target group to include lecturers from military academies, facilitating a comparative analysis between this specific group of institutions and general universities to identify potential differences in the impact of digital transformation on lecturers' job performance. Finally, studying barriers to digital transformation is meaningful for universities. Future research on digital transformation can focus on studying obstacles to digital transformation. From the results, policies will be proposed to reduce barriers and promote digital transformation in universities in Vietnam.

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NO CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflict of interest.

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