

Causal Relationships of Factors Affecting the Work Efficiency of Private University Lecturers in Chengdu City, Sichuan Province, People's Republic of ChinaLe Kuang¹ Napawan Netpradit² Pichaphob Panphae³Faculty of Management Sciences, Lampang Rajabhat University^{1, 2}Faculty of Business Administration and Liberal Arts, Rajamangala University of Technology Lanna³E-mail: kuangle1216@outlook.com¹E-mail: nok_napawan@hotmail.com²E-mail: pichaphob.pla@gmail.com³**Abstract**

This study employed a mixed methods research design, aiming to (1) examine the levels of private university lecturers' perceptions regarding quality of work life, job satisfaction, organizational commitment, digital human resource management, and work efficiency in Chengdu City, Sichuan Province, People's Republic of China; (2) investigate the causal factors influencing work efficiency among these lecturers; and (3) develop a concrete model for enhancing lecturers' work efficiency.

This study yielded the following key findings: (1) All variables measured in the study demonstrated high average scores. Among them, organizational commitment exhibited the highest mean (2) The analysis of causal factors influencing the work performance of faculty members at private universities in Chengdu identified quality of work life as the most significant predictor. The results of hypothesis testing demonstrated strong statistical significance and were well supported by empirical data ($\chi^2 = 10.335$; $df = 9$; $p = 0.246$; $GFI = 0.986$; $AGFI = 0.982$; $CFI = 0.975$; $RMSEA = 0.080$; $CMIN/DF = 9.258$).

Keywords: Quality of Work Life, Job Satisfaction, Organizational Commitment, Digital Human Resource Management, Work Efficiency

Introduction

The development of education in the People's Republic of China is considered an important policy of the government, which is prioritized above the development of other sectors. The government has established a national development policy based on science and education, which stipulates that compulsory education lasts for 9 years, from primary school to lower secondary school. At the same time, deep educational reforms have been implemented to ensure that free education covers all levels and types of education, such as kindergarten, primary education, secondary education, and university. Both central and local governments have supported budgets to develop education to achieve higher quality and standards (Daoming, 2020).

The education system of the People's Republic of China is divided into three levels: basic education (from kindergarten to upper secondary school), vocational education or specialized secondary education, and higher education. Higher education includes instruction at the bachelor's, master's, and doctoral levels, provided by universities and institutions that possess competencies in teaching, scientific research, and social services. This is to elevate the country's education to compete internationally (Thitiporn Jobsonjorn, 2016).

The administration of higher education in China consists of both central and local agencies. The Ministry of Education is responsible for supervising higher education, and management is conducted under the leadership of the Communist Party Committee within institutions. It also plays a role in planning and monitoring the quality of education in higher education institutions, both public and private (Daoming, 2020; Zhu & Lou, 2011). The establishment of private universities in China must be regulated by the government. Universities established by private capital must meet appropriate qualifications as specified in the Private Education Promotion Law of the People's Republic of China, and must also support skill development and professional training for faculty members and staff (Li, 2022).

Private universities in Chengdu operate in the form of education businesses that aim for profit, with the goal of elevating the country's education to meet international standards. However, they still face challenges in competing with public institutions that receive greater support in terms of budget and resources. In addition, the expansion of international programs has further increased competition within the education system (China Admission, 2023).

From the development of the education system in the People's Republic of China, which emphasizes adaptation to market demands and the expansion of mass education, research on the relationships among quality of work life, job satisfaction, organizational commitment, and digital human resource management is important for promoting the work efficiency of lecturers in private universities in Chengdu. These factors can affect human resource management in higher education institutions or other organizations in order to develop and retain capable lecturers within institutions (Schmiedehaus et al., 2023; Amitai et al., 2022; Wang, Gao & Wang, 2024).

Therefore, this research aims to study the causal relationships of factors affecting the work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People's Republic of China, focusing on five key variables: quality of work life, organizational commitment, job satisfaction, digital human resource management, and work efficiency, in order to provide guidelines for managing capable human resources in higher education institutions and to develop knowledge in the digital era.

Research Objectives

1. To study the level of lecturers' opinions regarding quality of work life, job satisfaction, organizational commitment, digital human resource management, and work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People's Republic of China.
2. To study the causal factors influencing the work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People's Republic of China.
3. To develop a model of work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People's Republic of China.

Research Hypotheses

Hypothesis 1: Quality of work life influences organizational commitment.

Hypothesis 2: Quality of work life influences job satisfaction.

Hypothesis 3: Quality of work life influences digital human resource management.

Hypothesis 4: Quality of work life influences work efficiency.

Hypothesis 5: Job satisfaction influences organizational commitment.

Hypothesis 6: Digital human resource management influences organizational commitment.

Hypothesis 7: Organizational commitment influences work efficiency.

Hypothesis 8: Job satisfaction influences work efficiency.

Hypothesis 9: Digital human resource management influences work efficiency.

Literature Review, Concepts, and Related Theories

The literature review in this research is divided into five parts: concepts of quality of work life, organizational commitment, job satisfaction, digital human resource management, and work efficiency. Scholars and researchers have provided the following concepts:

Concept of Quality of Work Life

Quality of work life is an important factor affecting the work efficiency of personnel in organizations. It can be measured through several indicators such as job satisfaction, efficient use of resources, and the ability to achieve goals (Tiawattanatrakul, 2010). It also refers to a good working environment in terms of fair compensation, job security, opportunities for development and advancement, and social integration in the workplace (Walton, 1974; Davis, 1977). These factors help enhance employee morale, enable employees to work efficiently, and reduce turnover rates (Greenberg & Baron, 1995). Moreover, the study of quality of work life is important for increasing job satisfaction and reducing job stress, which leads to employees being happy at work and ready to develop their potential (Walton, 1974; Huse & Cummings, 1985).

Research findings indicate that lecturers with a high quality of work life tend to demonstrate better creative behaviors in teaching and participate in organizational development (Rahimi, H. et al., 2024). In addition, support for technology use and emphasis on work–life balance are also factors that increase job satisfaction (Bauwens, R. et al., 2024). The study of Chen et al. (2022) indicates that professional identity and career opportunities have an impact on job happiness in private universities. Lecturers who receive support from the organization tend to have higher job happiness and can better develop their teaching potential. The study of Harrison, M. G. et al. (2024) found that the institutional environment is related to lecturers' well-being through support for psychological needs satisfaction. The study by Demirdis, M. (2024) also indicates that lecturers working outside their professional field may face issues related to intellectual responsibility, which affects work quality. Therefore, addressing lecturers' financial issues is important so that they can fully focus on their teaching responsibilities.

Research framework

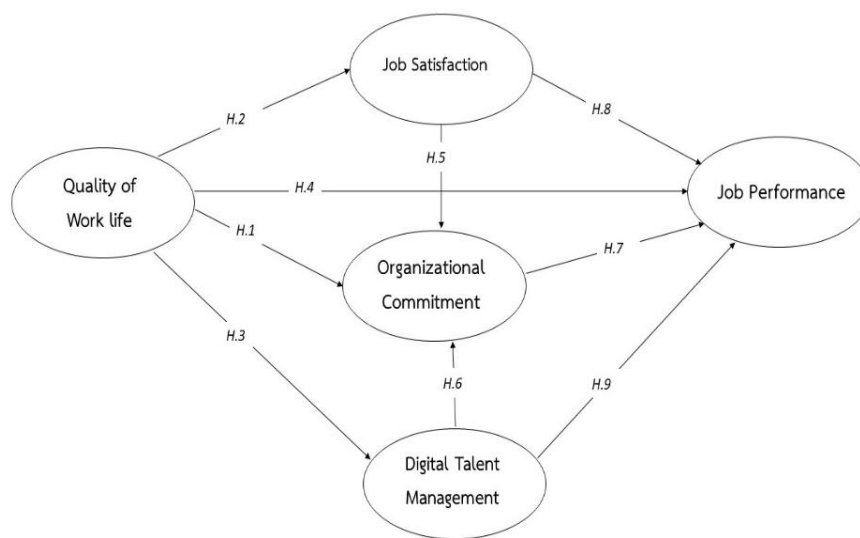


Figure 1. Research conceptual framework.

Research Methodology

Population and Sample

Quantitative: The population used in this research consisted of lecturers in private universities in Chengdu City, Sichuan Province, People's Republic of China, which comprised a total of 4 private universities, namely The Tianfu College of Southwestern University of Finance and Economics, Sichuan University of Media and Communications, Sichuan Film and Television University, and Sichuan Technology and Business University, with a total number of 3,939 lecturers. A quantitative sample of 650 people was selected using the Convenience Sampling method from the group of lecturers in the 4 universities mentioned above.

Qualitative: The qualitative sample consisted of lecturers from the 4 universities, with the number of key informants set at 20 people (5 people from each university), who were required to have at least 2 years of working experience at the university and be willing to provide information.

Research Instruments

Quantitative: The research instrument was an online questionnaire, which was developed based on the conceptual framework and related literature in order to collect data from the sample group regarding factors affecting lecturers' work efficiency. It consisted of 8 sections of questions, namely quality of work life, organizational commitment, job satisfaction, digital human resource management, and work efficiency, using a 5-point Likert scale.

Qualitative: The research instrument was a semi-structured in-depth interview, with questions covering various issues such as quality of work life, organizational commitment, job satisfaction, digital human resource management, and work efficiency.

Instrument Testing

Quantitative: The developed questionnaire was examined for content validity by 3 experts, and the formula of Rovinelli & Hambleton (1977) was used to calculate the Index of Item-Objective Congruence (IOC). The congruence values obtained were greater than 0.5, and therefore those items were selected for use in the research. Reliability testing was conducted by calculating Cronbach's Alpha coefficient, which was found to be 0.949, higher than the acceptable standard value ($\alpha \geq 0.700$), thereby confirming that the instrument was reliable.

Qualitative: The qualitative instrument was examined for accuracy and credibility with the assistance of 3 experts in checking the content and language accuracy.

Data Collection

Quantitative: Quantitative data were collected through an online questionnaire. The sample group responded to the online questionnaire, which provided data measurable in the form of quantitative indicators.

Qualitative: Qualitative data were collected through in-depth interviews with lecturers in private universities in Chengdu City, conducted through both online interviews and face-to-face interviews. Open-ended questions were used to allow informants to fully express their opinions and experiences.

Data Analysis

Quantitative: Quantitative data analysis used descriptive statistics to determine percentage, mean, and standard deviation (S.D.). Exploratory Factor Analysis (EFA) was used to reduce variables and identify the main factors that could explain the variables under study. Confirmatory Factor Analysis (CFA) was used to verify the validity and reliability of the variables and to analyze the path relationships among variables with SEM, using the AMOS program.

Qualitative: Qualitative data analysis used content analysis by linking the data obtained from in-depth interviews and interpreting the data to identify relationships and linkages among the obtained information, in order to present the findings inductively.

Research Results

The research entitled *Causal Relationships of Factors Affecting the Work Efficiency of Private University Lecturers in Chengdu City, Sichuan Province, People’s Republic of China* can present the research results as follows:

The results of the analysis according to Objective 1) to study the level of lecturers’ opinions regarding quality of work life, job satisfaction, organizational commitment, digital human resource management, and work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People’s Republic of China.

Table 1. Showing the level of importance of variables in the research

Variable	Mean	S.D.	Level
1. Quality of work life	4.44	0.723	Highest
2. Organizational commitment	4.58	0.630	Highest
3. Job satisfaction	4.49	0.681	Highest
4. Digital human resource management	4.43	0.651	Highest
5. Work efficiency	4.53	0.622	Highest

From Table 1, it was found that the variable organizational commitment had the highest mean at the highest level, followed by the variable work efficiency, the variable job satisfaction, the variable quality of work life, and the variable with the lowest mean was digital human resource management (means = 4.58, 4.53, 4.49, 4.44, and 4.43, respectively). From the research findings, organizational commitment was rated at the highest level, indicating a very high level of personnel attachment to the organization, which is consistent with the concept that organizational commitment is an important factor in driving work efficiency and job satisfaction. Meanwhile, although the variable digital human resource management had a high mean (4.43), it was still the lowest when compared with the other variables. This may reflect challenges or limitations in the adaptation of organizations and personnel to digital changes, which is an issue that should be further developed to strengthen organizational capability in the digital era. The results of the analysis according to Objective 2) to study the causal factors influencing the work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People’s Republic of China, found that quality of work life had a direct influence on organizational commitment of 0.37, an indirect influence of 0.247, and a total influence of 0.644. Quality of work life had a direct influence on job satisfaction of 0.48, no indirect influence, and a total influence of 0.48. Quality of work life had a direct influence on digital human resource management of 0.42, no indirect influence, and a total influence of 0.42. Quality of work life had a direct influence on work efficiency of 0.62, an indirect influence of 0.63, and a total influence of 1.25. Job satisfaction had a direct influence on organizational commitment of 0.38, no indirect influence, and a total influence of 0.38. Digital human resource management had a direct influence on organizational commitment of 0.34, no indirect influence, and a total influence of 0.34. Organizational commitment had a direct influence on work efficiency of 0.45, no indirect influence, and a total influence of 0.45. Job satisfaction had a direct influence on work efficiency of 0.65, an indirect influence of 0.171, and a total influence of 0.821. Digital human resource management had a direct influence on work efficiency of 0.56, an indirect influence of 0.153, and a total influence of 0.713. The hypothesis testing results were consistent with the empirical data at the statistically significant level of .05, with values of ($\chi^2 = 10.335$; $df = 9$; Probability level = 0.246; GFI = 0.986; AGFI = .0.982; CFI = 0.975; RMSEA = 0.080; CMIN/DF = 9.258

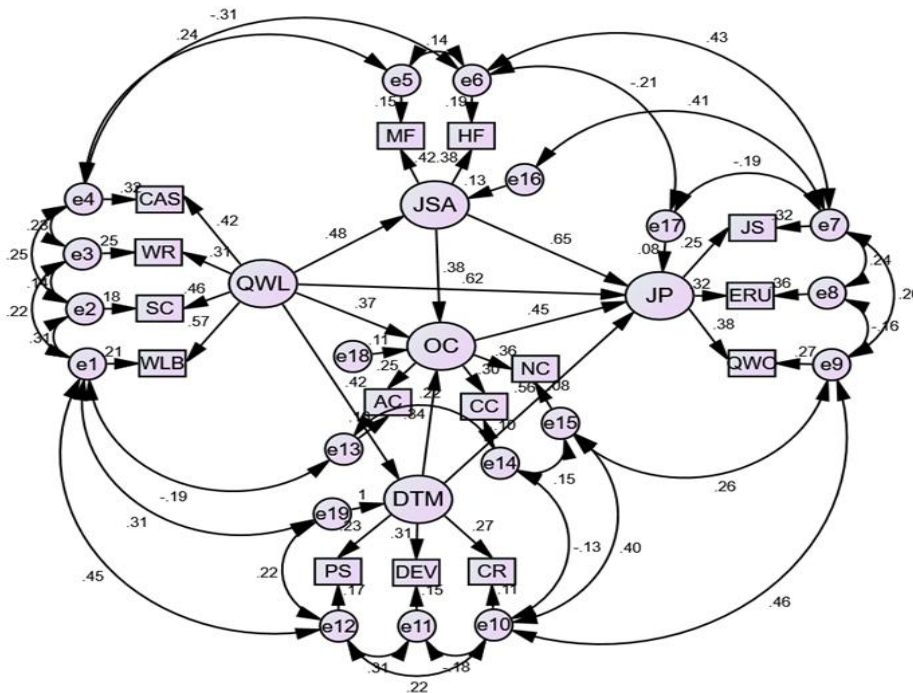


Figure 2. Causal relationship model.

The results of the analysis according to Objective 3), which aims to develop a model of work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People’s Republic of China, found that:

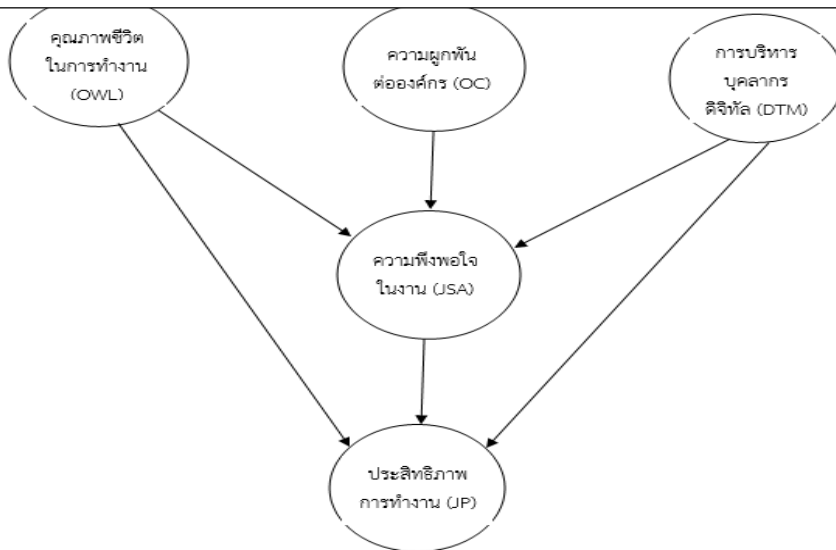
1. **Managerial knowledge:** By synthesizing the results of quantitative and qualitative research, it is possible to construct a preliminary framework for developing a model to improve the efficiency of lecturers in private universities in Chengdu in four aspects, namely: (1) a preliminary framework for developing quality of work life, (2) a preliminary framework for developing organizational commitment, (3) a preliminary framework for developing digital human resource management, and (4) a preliminary framework for developing work efficiency. These four development frameworks are designed to have both direct and indirect effects on job satisfaction and work efficiency.

2. **Theoretical knowledge:** By synthesizing a theoretical framework for developing the work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, job satisfaction is considered to function as a mediating variable (Mediator) between the antecedent factors, namely quality of work life, organizational commitment, and digital human resource management, which have direct effects on job satisfaction; and quality of work life, organizational commitment, digital human resource management, and job satisfaction all affect work efficiency.

Conclusion and Discussion

The results of the research according to Objective 1, which aimed to study the level of lecturers’ opinions regarding quality of work life, job satisfaction, organizational commitment, digital human resource management, and work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People’s Republic of China, found that quality of work life (QWL) has an important causal relationship with lecturers’ work efficiency, particularly in terms of appropriate and sufficient compensation for the cost of living (CAS1), which has the highest loading value and reflects lecturers’ expectations regarding income that can meet basic needs. This is consistent with the concepts of

Figure 3: Frame showing the relationship between the newly developed latent variables.



Walton (1973) and Erlangga et al. (2021), which state that QWL directly affects motivation and work efficiency of personnel in educational organizations. In terms of job satisfaction, it was found to be a factor that directly influences work efficiency, particularly in motivational factors (MF), such as opportunities for career development (MF5) and work that enables self-development (MF1), which reflect the importance of a working environment that supports growth and adaptation in professional roles.

Regarding organizational commitment, it was found that affective commitment (AC) is the factor with the highest influence on work efficiency. Feeling proud of the organization (AC2) and loving the work performed (AC5) are variables that reflect dedication and pride in one’s work role. This is consistent with the concepts of Buchanan (1974) and Porter et al. (1974), which

emphasize the importance of emotional commitment to work efficiency.

The results of the research according to Objective 2, which aimed to study the causal factors influencing the work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People’s Republic of China, found that quality of work life (QWL) has a direct influence on work efficiency at a statistically significant level of 0.05, with indirect effects through variables such as digital human resource management (DTM) and job satisfaction. This is consistent with the research of Rahimi et al. (2024), which found that lecturers with high quality of work life have higher job satisfaction and are able to create more effective teaching methods.

In terms of digital human resource management (DTM), it was found that development and compensation are important strategies for enhancing lecturers’ work efficiency. Continuous development of lecturers’ capabilities (DVE1) and appropriate rewards (CR2) help strengthen commitment and loyalty to the organization. This is consistent with the studies of Li Sheng et al. (2023) and Farndale et al. (2022), which indicate that organizations using digital technology in human resource management can effectively improve work efficiency.

The results of the research according to Objective 3, which aimed to develop a model of work efficiency of lecturers in private universities in Chengdu City, Sichuan Province, People’s Republic of China, found that digital human resource management and organizational commitment are the most influential factors affecting lecturers’ work efficiency. The improvement of the structural equation model (SEM) resulted in better parameter values of the variables, with compensation and retention (CR) being the most influential variable, reflecting the importance of appropriate compensation and job security. This is consistent with many studies that indicate that compensation and stability are key factors affecting the retention of quality personnel in organizations (Wayoi et al., 2021).

At the same time, organizational support, such as the use of digital technology for human resource management and improvements in the working environment, affects job satisfaction and enhances lecturers’ work efficiency. This is consistent with the research of Ganeshan & Vethirajan (2023), which found that e-HRM plays an important role in developing and maintaining the quality of work of personnel in organizations.

Recommendations

Recommendations from the Research Findings

1. Continuous development of lecturers’ knowledge and skills should be emphasized to enhance adaptability, which is an important characteristic of personnel in modern organizations. This will contribute to strengthening teaching and research capabilities in line with technological changes and labor market demands.
2. Research and innovation connected to practical work should be promoted in order to enhance efficiency and the quality of lecturers’ outputs, as well as to support knowledge exchange among institutions.

3. The factor of continuance commitment has less influence compared to other factors, which may indicate that intrinsic motivation has less influence than extrinsic motivation among professional lecturers. Therefore, a transparent and comprehensive performance evaluation system covering quantity, quality, and outcomes should be developed to create motivation and job satisfaction, and to retain university personnel.

Recommendations for Future Research

1. Further studies should explore factors affecting job satisfaction and work efficiency of lecturers in greater depth, such as the impact of digital environments and strategic management in private universities.
2. Comparative research should be conducted between private universities in Chengdu and universities in other cities in order to identify development approaches suitable for local contexts.
3. Future research should expand to examine the impact of organizational commitment and digital human resource management on teaching and research outcomes, in order to link with the overall performance of universities.

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