The Causal Relationship of Factors Affecting the Performance of University Professors in Guangxi Province People's Republic of China

Li Jing[1], Napawan Netpradit[2] and Thatphong Awirothananon[3]

Doctor of Philosophy Program in Management, Lampang Rajabhat University, Thailand[1,2]

Faculty of Business Administration Maejo University, Thailand[3]

Corresponding Author, Email: 42127385@qq.com[1]

Abstract

This study aimed to analyze the causal relationship of factors affecting the performance of university professors in Guangxi Province. A variety of theoretical concepts and statistical analyses, such as Structural Equation Model Analysis (SEM), are used to measure and evaluate the impact of these factors on teacher performance in multiple dimensions, such as research outcomes, teaching quality, and academic roles in the professional community. Therefore, this research aims to use quantitative and qualitative research methodologies (Mixed Methods) with data collected from a sample of professors from universities of science in Guangxi Province. A total of 10 institutions with a total of 500 respondents and conducted in-depth interviews to obtain comprehensive data both statistically and qualitatively.

The results of the study showed that the factors of emotional management Knowledge management and benefit perception all have a direct and significant impact on the performance of teachers. Whether it is teaching, research, and self-development. In addition, the organization of learning acts as an intermediary variable that enhances the potential to integrate these factors into effective linkages. Promote cooperation, knowledge exchange, and continuous academic adaptation. As a result, personnel are ready to create quality work and drive the development of science and technology in Guangxi to be more advanced.

Keywords: emotion management, knowledge management

Introduction

In the current era where the development of science and technology plays an important role in international competition, the development of the capacity of educational personnel is a key strategy that many countries have attached importance to (Organization for Economic Co-operation and Development [OECD], 2021). The People's Republic of China is ranked as one of the countries with rapid growth in science and technology. In recent years, the number of research personnel, the rate of research investment, and the research output have received significant support from the government (China Statistical Yearbook, 2023). In addition, the development of Guangxi Province in terms of research and higher education is

another example that reflects the overall picture of investment in human resources and the driving force of technology in the region. Many universities in Guangxi Province have been encouraged by the central government to focus on developing advanced science and research (Guangxi Statistical Yearbook, 2023). Whether it is financial support or opening up opportunities for cooperation between universities and the industry sector, there is still a challenge in improving the "teacher performance", which is the mechanism driving academic knowledge and research. Therefore, studying the factors affecting the level of performance is very important. In addition, The Nobel Prize report found that the proportion of laureates in science is still concentrated in major industrialized countries such as the United States and Western Europe (The Nobel Prize, 2024). This, in a sense, reflects the challenges for developing countries like China in trying to create high-quality research personnel in line with the global trend of innovation competition. Therefore, improving factors related to personnel management in universities, such as emotional management, knowledge management, perception of benefits, and the creation of learning organizations, need to be studied and developed.

It can be said that there is a need for in-depth research into the "factors" that affect professors' work efficiency, especially in Guangxi Province, an area with continuous distribution of educational investment projects, so that the research results can be used to plan the development of educational personnel at both the university and national levels, as well as to raise the competitiveness of the People's Republic of China in research and development in a tangible and sustainable manner.

Research objectives

1. To study the importance of factors affecting professors' work efficiency
2. To analyze and study the causal relationship of factors affecting work efficiency
3. To analyze the role of learning organization as a mediating variable
4. To propose guidelines for developing and improving professors' work efficiency

Research hypothesis

From the concept of this research, it is predicted that the factors of "emotion management", "knowledge management" and "perceived benefits" will have a positive influence on "work efficiency" with "learning organization" acting as a mediator to expand or promote the relationship between these factors and work efficiency to be stronger. Therefore, the research hypothesis can be defined as follows:

H1: Emotional Management has a positive influence on Performance.

H2: Knowledge Management has a positive influence on Performance.

H3: Perceived Usefulness has a positive influence on Performance.

H4: Learning Organization has a positive influence on Performance.

H5: Learning Organization mediates the relationship between Emotional Management and Performance.

H6: Learning Organization mediates the relationship between Knowledge Management and Performance.

H7: Learning Organization mediates the relationship between Perceived Usefulness and Performance.

The hypothesis aims to test both the direct effect of each independent variable on work efficiency and the indirect effect through the learning organization (Mediating Variable). If the statistical analysis results support these hypotheses, it will indicate that creating an atmosphere conducive to learning and knowledge exchange within the university will help expand the positive effects from appropriate emotion management, effective knowledge management, and attitudes that value or benefit from various technologies and innovations to be reflected in the effective work of professors more clearly

Literature Review

This study reviews and compiles related concepts, theories, and research in detail as follows:

Concept Emotion management is a process that individuals use to control their emotions and express their emotions appropriately according to the situation, which can affect work performance, especially work that requires interpersonal relationships (Gross & Thompson, 2007). There is research showing that appropriate emotion management can help reduce stress and increase concentration at work for university lecturers (Baba, Makhdoomi & Siddiqi, 2021).

Concept Knowledge management is a process used to create, collect, store, share, and apply knowledge within an organization to improve work efficiency and effectiveness (Marquardt, 1 9 9 6) . Research shows that effective knowledge management promotes knowledge exchange among personnel, enabling organizations to develop sustainably (Takeuchi & Nonaka, 2000). In addition, good knowledge management is related to increasing the organization's competitiveness (Lin & Huang, 2020).

Concept Perceived usefulness is a concept that describes the degree to which individuals perceive that using a technology or system will make their work easier and more efficient (Davis, 1 9 8 9) . Several studies have shown that perceived usefulness has a direct effect on individuals' attitudes and usage behaviors. In the context of university lecturers, perceived usefulness of new technologies can lead to greater acceptance and use of technology in teaching and research (Venkatesh & Davis, 2000)

Concept of Learning Organization A learning organization is an organizational form that emphasizes the creation of a system that facilitates continuous learning in order to adapt and compete in changing situations (Senge, 1990). The key elements of a learning organization

include personal mastery, mental models, shared vision, team learning, and system thinking. Organizations that can apply this concept will be more effective in adapting to change and have higher competitive potential (Senge, 1990). From the review of related concepts, theories, and research, the researcher has summarized and defined the conceptual framework for this study based on the above four variables to study the causal relationship that affects the work performance of university lecturers in Guangxi Province.

Research Methodology

This research is a mixed methods research using both quantitative research and qualitative research to obtain complete and in-depth data. The main steps are as follows:

1. Population and Sample

1.1 Population The population in this research is university lecturers in Guangxi Province, People's Republic of China. The focus is on universities or higher education institutions that have science teaching and research, which total 10 places.

1.2 Sample To obtain a comprehensive and diverse sample The sample was stratified random sampling according to the fields of study and academic positions of lecturers in all 10 universities. The convenience sampling method was also used only in cases where access to some lecturers was limited. The total sample size was 500 people, divided into 300 assistant professors and below, and 200 associate professors and professors. This sample size is consistent with the sample size determination guidelines of Hair et al. (2010) who recommend that in survey research using questionnaires, if there are many observed variables, selecting a minimum sample size of 200 - 400 people or more will increase the confidence in the structural equation modeling (SEM) analysis.

2. Research Instrument

2.1 Questionnaire The questionnaire was developed according to the research conceptual framework. It consisted of 3 main parts:

- Part 1 General information of the respondent (such as gender, age, educational qualification, academic position, field of study, and work experience)

- Part 2 Opinions on emotion management factors, knowledge management, perceived benefits, and learning organization, using a 5-level Likert Scale (1 = strongly disagree, 5 = strongly agree)

- Part 3 Opinions on performance in various dimensions as defined in the concepts and theories

2.2 Semi-structured Interview to collect in-depth information Used for qualitative research by interviewing 10-15 expert lecturers or senior executives of the university. In-depth questions on support and policies to promote emotion management, knowledge management, and the creation of a learning organization, including views on the perceived benefits of technologies used in research and teaching.

2.3 Instrument Quality Check Before collecting actual data, the questionnaire was tested for reliability, with Cronbach's Alpha coefficient of more than 0.70 in all variables, and content validity checked by experts (Index of Item-Objective Congruence: IOC) of not less than 0.50.

3.Data collection

3.1 Quantitative data collection The questionnaires were distributed in both paper and online forms (Online Survey) through the platforms of universities in Guangxi. The research department and academic department of the university were coordinated to collect data from the specified number of teachers.

3.2 Qualitative data collection The researcher conducted semi-structured interviews with executive teachers or experts who play important roles in research and teaching by appointment in advance. The interviews were conducted in person or via video conference. The interviews were audio-recorded and transcribed for content analysis.

4. Statistics used in the research

4.1 Descriptive Statistics Use mean, standard deviation, frequency and percentage to present general information of the sample group and the level of opinion on each variable.

4.2 Inferential Statistics

- Analysis of the reliability of the tool (Cronbach's Alpha)

- Analysis of the relationship between variables using Pearson's Correlation Coefficient

- Analysis of variance (ANOVA) or T-test (in the case of comparing 2 groups) if wanting to compare the mean of the variable according to the demographic variable group

- Structural Equation Modeling (SEM) or Path Analysis to test the causal relationship of each variable in the conceptual framework, including testing the mediating variable (Mediation) Analysis)

5. Data Analysis

5.1 Quantitative data analysis Data obtained from the questionnaire will be recorded and processed with a statistical computer program such as SPSS or AMOS/SmartPLS. For in-depth analysis, to obtain the parameter values indicating the influence of independent variables on dependent variables and the role of mediating variables (Mediation Analysis)

5.2 Qualitative data analysis The data obtained from the interviews will be transcribed and summarized in the form of key themes to compare and support quantitative data (Triangulation) to be able to answer the research questions completely. The researcher will analyze and interpret according to the content analysis approach, focusing on finding "Categories" or "Themes" that reflect the thoughts of the interviewees and link to the findings consistent with the theory used in the research.

In summary, this research uses a mixed-method research design to obtain both broad quantitative data with statistical significance and in-depth qualitative data covering various

dimensions of management and development of university lecturers' potential, which will lead to concrete policy and practical recommendations for increasing the efficiency of teaching, research, and academic services of lecturers in Guangxi Province, the People's Republic of China sustainably.

Research Results

Part 1: Results of the analysis of general data of the respondents

It was found that university professors in Guangxi Province, the People's Republic of China, are more male than female. They are between 31 and 35 years old. Their education level is at the doctoral level. Their average monthly income is 9,001-10,000 yuan (approximately 43,000-48,000 baht). Most of them have worked for 12 years or more. They belong to 10 universities in equal numbers, which are Guangxi Medical University, Guangxi University, Guangxi University of Chinese Medicine, Guilin Medical University, Wuzhou University, Guilin University of Electronic Technology, Guilin University of Technology, Guangxi Minzu University, Guangxi Normal University and Guangxi University of Science and Technology. The largest number is in the fields of Literature and Media, scientific works and publication of works within 1-3 years. In terms of academic articles, the largest number is patents, with 1-3 patents, and the largest number is other works, with 1-3 pieces. As for the types of conferences attended within 1-3 years, everyone has attended national conferences nationwide.

Part 2: Results of the analysis of latent variables in the research were: emotional management, knowledge management, perceived benefits, learning organization, and work efficiency. Descriptive statistics were used to find the mean, standard deviation, and coefficient of variation.

Table 1 Results of the analysis of latent variables in the research were: emotional management, knowledge management, perceived benefits, learning organization, and work efficiency.

variables in the research	($\bar{X}$)	(S.D.)	(CV)	Opinion level
Emotion Management	4.17	0.45	0.11	Well
Knowledge Management	4.11	0.51	0.12	Well
Perceived Benefits	4.21	0.47	0.11	Well
Learning Organization	4.11	0.49	0.12	Well
Work efficiency	4.20	0.48	0.11	Well
Totel	**4.16**	**0.50**	**0.11**	**Well**

From Table 1, it was found that the overall picture was at a high level $\overline{\mathbf{X}}$ = 4.17), with a distribution coefficient of less than 0.30 (CV = 0.11), indicating that the data was distributed quite low. It can be presented that emotional management from the teachers' perspectives was at a high level in all 5 dimensions, namely, the aspect of selecting and adjusting situations, the aspect of controlling attention, the aspect of evaluating thoughts, the aspect of adjusting responses, and the aspect of managing pressure, respectively.

Part 3: The results of the study of the causal relationship of factors affecting work performance of university teachers in Guangxi Province, People's Republic of China by analyzing the measurement model and the structural model.

From the data analysis to study the causal relationship of factors affecting the performance of university lecturers in Guangxi Province, People's Republic of China, by studying the important factors including Emotional Management (EM), Knowledge Management (KM), Perceived Usefulness (PU), and Learning Organization (LO), the results can be summarized as follows.

The results of the multiple regression analysis revealed that the factors of emotion management, knowledge management, and perceived benefits had a statistically significant direct and positive influence on work performance (PF) (p<0.001), as shown in Table 1.

Table 2 Regression analysis results of factors affecting work performance of university teachers in Guangxi Province.

Variables	(B)	(Beta)	t-statistic	p-value
(Constant)	1.245	–	11.235	.000***
(EM)	.312	.315	6.884	.000***
(KM)	.287	.293	5.764	.000***
(PU)	.249	.258	4.937	.000***
(LO)	.415	.437	7.624	.000***
R			.775	
R²			.601	
Adjusted R²			.598	

*Statistically significant at the 0.05 level.
**Statistically significant at the 0.01 level.
***Statistically significant at the 0.001 level.

The analysis results showed that Learning Organization (LO) was the variable with the highest positive influence on work performance (Beta = .437, p < 0.001), followed by Emotion

Management (Beta = .315, p < 0.001) and Knowledge Management (Beta = .293, p < 0.001). The factor of perceived benefits had the lowest influence but was still significant (Beta = .258, p < 0.001). This model could explain 59.8 percent of the variance in work performance (Adjusted R² = .598). The results of the mediation analysis found that Learning Organization (LO) played an important role as a mediating variable between Emotion Management (EM), Knowledge Management (KM), and Perceived Benefits (PU) and work performance (PF). The LO variable acted as a mediating effect in a way that significantly increased the relationship between these variables and work performance (p < 0.001).

The researcher conducted an examination of the hypothetical model developed from related concepts and theories to see if it was consistent with the empirical data. The results of the examination of the consistency of the hypothetical model with the empirical data by analyzing the structural equation model (SEM) revealed that the hypothetical model was not consistent with the empirical data, which was considered from the fit index as follows: The Chi-square value was statistically insignificantly different from zero at the .05 level (Chi-square = 1044.329; df = 222; p = 0.000; CFI = 0.856; GFI = 0.814; AGFI = .0.769; RMSEA = 0.096; The results of the analysis of the hypothetical model are shown in Figure 1.
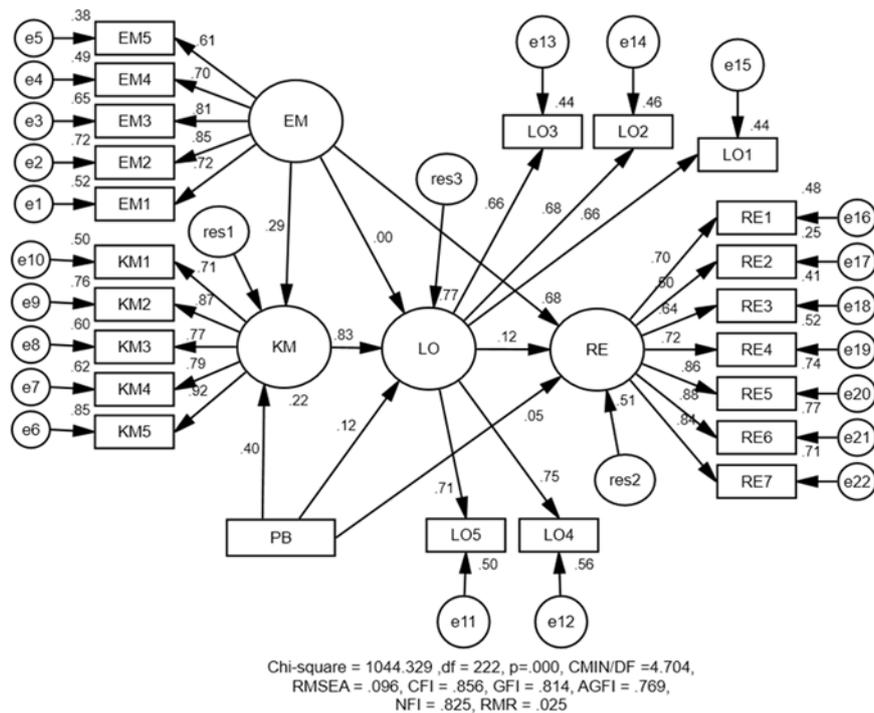

Figure 1 The results of the analysis of the hypothetical

Discussion

From the results of the study, it can be concluded that the factors of emotion management, knowledge management, and perceived benefits have a significant direct impact on work performance, which is consistent with the hypothesis. The fact that learning organizations are the most important factor affecting work performance indicates that

universities that create an environment that supports continuous learning will be able to help lecturers exchange knowledge and skills more effectively. This result also supports the research of Senge (1990) and Marquardt (1996) who emphasized the importance of creating a learning culture within the organization to increase overall work performance.

The analysis of the role of learning organizations as a mediating variable also found that learning organizations enhance the relationship between emotion management, knowledge management, and perceived benefits with work performance, which is consistent with the research of Gross & Thompson (2007) and Davis (1989) who stated that appropriate emotion management and perceived benefits from various technologies will affect work performance more when personnel are in an environment that promotes learning.
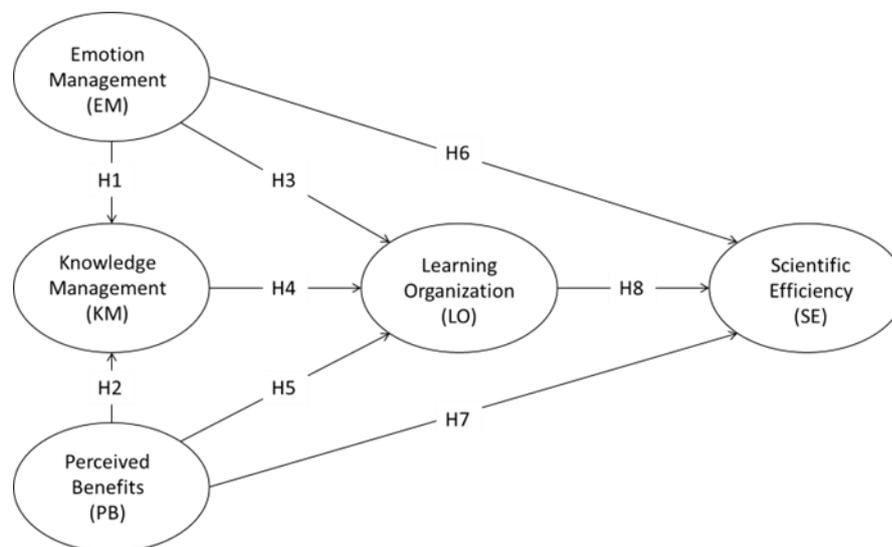
New Knowledge

Figure 2 The new knowledge

From Figure 2, the research findings can be summarized that the new knowledge found that emotion management (EM) and perceived benefits (PB) play an important role in knowledge management (KM) and learning organization (LO). Emotion management has a direct positive effect on knowledge management (influence 0.27) and an indirect effect on learning organization through knowledge management (influence 0.22), but does not directly affect learning organization. While perceived benefits has a direct positive effect on knowledge management (influence 0.43) and both direct (influence 0.13) and indirect (influence 0.35) effects on learning organization. In addition, knowledge management has a significant direct positive effect on learning organization (influence 0.83) and learning organization has a direct positive effect on work efficiency (influence 0.11). Emotion management and perceived benefits also have a direct positive effect on work efficiency (influence 0.77 and 0.12,

respectively), but no indirect effect on work efficiency through learning organization. This new knowledge indicates a complex relationship between emotional factors, perceived benefits, knowledge management, and learning organization. and work efficiency, which can be used to design strategies to effectively develop organizational efficiency.

Recommendations

Universities in Guangxi Province should establish clear mechanisms and policies to encourage teachers to systematically manage emotions and knowledge; support new technologies and knowledge development to improve work efficiency; and establish a culture and support system for collaborative learning at the organizational level to enable personnel to continuously learn and exchange experiences.

Suggestions for future research

Future research should further study other factors that may influence work efficiency, such as leadership, work environment, or intrinsic motivation. In addition, the sample should be expanded to universities in other provinces to obtain diverse and comparable data at the national level.

Reference

Jumpot Saisunthon. (2009). International Law (8th ed., revised). Bangkok: Winyuchon.

Piya Naksong, and Phanrawee Worasittikun. (2002). Watching Movies, Listening to Music, Playing Games, and Singing Karaoke. Bangkok: Success Media.

Phra Dhamma Wisutthimongkol (Luang Ta Phra Maha Bua Yanasampanno). (2011). Nirvana is Nirvana. Bangkok: Disciples of the Electricity Generating Authority of Thailand.

Supamas Angsuchot, Somthawin Wichitrawanna, and Ratchanikul Pinyophanuwat. (2008). Statistical Analysis for Social Science and Behavioral Science Research: LISREL Program Techniques. Bangkok: Mission Media.

Seni Pramoj, M.R. (1992). Chiwalikit. Bangkok: Thai Wattana Panich Printing House. Usanee Saengphanit. (2021). Causal factors affecting operational constraints and access to financial sources from financial institutions of SMEs in Phitsanulok Province. Journal of Humanities and Social Sciences, Pibulsongkram Rajabhat University, 15(1), 13-26.

Anek Amarapitak, and Wuttichai Niamthep. (2021). Motivation affecting the career competence of teachers in schools under the Office of the Secondary Education Service Area 16. Journal of Humanities and Social Sciences, Pibulsongkram Rajabhat University, 15(1), 104-116.

Monrat Kaewkerd, Sukanlaya Chaemchoi, and Phrut Siribanpitak. (2021). The necessity for academic administration of secondary schools according to the concept of digital citizenship. Journal of Humanities and Social Sciences, Pibulsongkram Rajabhat University, 15(1), 66-78.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340.

Gross, J. J., & Thompson, R. A. (2007). Emotion regulation: Conceptual foundations. In J. J. Gross (Ed.), Handbook of emotion regulation (pp. 3-24). New York, NY: Guilford Press.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis (7th ed.). Upper Saddle River, NJ: Pearson Education.

Marquardt, M. J. (1996). Building the learning organization: A systems approach to quantum improvement and global success. New York, NY: McGraw-Hill.

Senge, P. M. (1990). The fifth discipline: The art and practice of the learning organization. New York, NY: Doubleday.

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), Emotional development and emotional intelligence: Implications for educators (pp. 3–31). New York, NY: Basic Books.

Nonaka, I., & Takeuchi, H. (1995). The knowledge-creating company: How Japanese companies create the dynamics of innovation. New York, NY: Oxford University Press.

Worcester, R. (2009). Reflections on corporate reputations. Management Decision, 47(4), 573-589.

Le, H. T. T. (2022). The mediating role of organizational learning capability in the relationship between knowledge management practices and organizational performance. Journal of Knowledge Management, 26(3), 644-665.

Chitnomrath, T. (2011). A study of factors regarding firm characteristics that affect financing decisions of public companies listed on the Stock Exchange of Thailand (Research report). Bangkok, Thailand: Dhurakij Pundit University.

Nickels, D. W. (2005). The relationship between IT-business alignment and organizational culture: An exploratory study (Doctoral dissertation). University of Memphis, Memphis, TN.

AEC Information Center. (2015). The knowledge of ASEAN. Retrieved September 6, 2016, from http://www.thai-aec.com.