

TEACHER COMPETENCY MODEL IN HUMAN RESOURCE MANAGEMENT: INTERNATIONAL ECONOMIC AND LEGAL EXPERIENCE IN CHINESE UNIVERSITIES UNDER DIGITALIZATION

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Abstract

Digitalization of the economy, the emergence of the global pandemic COVID-19, daily life, creativity of modern youth, the rapid development of scientific and technological progress force heads of state and successful managers to consider the process of human resource management from another angle. In fact, today the international experience of human resource management shows results in which business leaders do not act as recruits and employers, but much higher. In the context of digitalization, the range of their everyday powers of leaders around the world in various sectors of the economy are expanding, focusing on human values. It is employers while hiring employees, has already talking about human rights, thinking about the personal development of their future employees, even the health and well-being of these staff. Employees, in turn, also force employers to be aware of their social problems. In particular, the practice in Ukraine proves that such an initiative of managers from a legal point of view is voluntary and is enshrined in the corporate norms of a functioning enterprise or organization. Thus, a new corporate culture of domestic business is formed and carries this message in the environment of international relations. And the well-being of human resources is becoming a priority area of the corporate social responsibility, which determines the relevance of the chosen topic of research and development of new strategies for personnel management to improve the enterprises' efficiency. The article deals with the aim to demonstrate the necessity of the implementation the teacher competency model as the innovative tool in human resource management. The authors achieved

this goal by researching the international legal and economic experience in the context of digitalization, as well as its application in the Chinese educational sphere.

Various methods of scientific research were used by the authors to establish universal scientific standards for the selection, evaluation, training and management of teachers' work. Using the survey method, the interview method and the expert survey method, the authors identified and summarized certain terms regarding the competencies of university teachers. Using the statistical research method, the reliability of the model was evaluated. Factor analysis was used to verify the certainty of the structural model. The application of the Delphi method provided the expert group with 30 important competencies. Respondents to the expert survey were teachers from the local universities in 8 provinces in the Eastern, Central and Western China. The method of factor analysis of data allowed the authors to form their own model of competence of teachers at the Chinese universities. The model proposed by the authors has: 1) four dimensions: basic qualities, pedagogical competence, research competence and competence of social service; 2) contains 22 indicators of second-level competence, which, unlike existing models, takes into account all research results and doesn't ignore the possibility of employees' professional development, even in the case of low rates of every person.

It has been determined that the competency of teachers in local universities is formed by the

interaction of four dimensions: basic competency (B), teaching competency (T), scientific research competency (R) and social service competency (S) in a certain logical relationship. The B + (T + R + S) model is used. The B in this model refers to the basic moral and psychological qualities that a university teacher must possess. The teaching competency, scientific research competency and social service competency (T + R + S) are the competencies that local universities must have in their work, which we call professional competency.

Application of the proposed model on practice will allow HR professionals not only to pay attention to the current assessment of the performance of university teachers, but also to be the effective tool for comprehensive assessment of teachers' competencies under conditions of digitalization.

Key words: *Historical Base, Comparative and International law, International Relations, Personnel, Legislation, Recruitment, Staff Motivation.*

1. Introduction

Digitalization of the economy, the emergence of the global pandemic COVID-19, daily life, creativity of modern youth, the rapid development of scientific and technological progress force heads of state and successful managers to consider the process of human resource management from another angle. In fact, today the international experience of human resource management shows results in which business leaders do not act as recruits and employers, but much higher. In the context of digitalization, the range of their everyday powers of leaders around the world in various sectors of the economy are expanding, focusing on human values. It is employers while hiring employees, has already talking about human rights, thinking about the personal development of their future employees, even the health and well-being of these staff. Employees, in turn, also force employers to be aware of their social problems. In particular, the practice in Ukraine proves that such an initiative of managers from a legal point of view is voluntary and is enshrined in the corporate norms of a functioning enterprise or organization. Thus, a new corporate culture of domestic business is formed and carries this message in the environment of international relations. And the well-being of human resources is becoming a priority area of the corporate social responsibility, which determines the relevance of the chosen topic of research and development of new strategies for personnel management to improve the enterprises' efficiency.

Personnel management is of primary importance for ensuring innovative entrepreneurship [1-3]. Along

with the above mentioned, the features of today's global labour market create new challenges in the field of human resource management, in particular in the context of digitalization of the economy, the concepts of "remote work" and "distance work", which allow legal work remotely in different parts of the world. In addition, in the United States, China, Germany, the United Kingdom, Poland, and Ukraine, despite different approaches to employment policy, the issue of attracting older workers has been widely discussed, causing some noise and challenges for young people. In particular, it is about the fact that the elderly are less aware of the workflow automation in the context of digitalization, but have higher salaries due to their experience. Practice has shown that this is one of the reasons for the emergence of hostility from young professionals. Thus, Khadzhyrov and Shkurat [1], define that in modern conditions the main trend of transformation processes in the personnel management system is the development of the so-called "company of the future", which involves changing the traditional management model to a new one – network, which requires a new type of leaders, managers and professionals with a new vision of production and corporate processes. This suggests that it is necessary to build and maintain a corporate employment brand for the global companies in order successfully compete for the qualified talented staff. Digital technologies are a modern key trend, mediating all spheres of social life and economy. As a result, a digital economy is being developed, characterized by the active use of informational technologies and the turnover of specific electronic goods and services. However, the rapid digitalization that has gripped society and the economy in the private and business environment has met resistance from some population's segments. Some of them do not want or do not have the opportunity to use a modern system and continue to work manually [2].

According to the research held by "Deloitte Global Human Capital Trends", "Deloitte" Company has developed a personal application "Vitality" to help employees more effectively manage their own efforts and measure job satisfaction with the help of "Well-being Index" [3]. "Danone" Company, which has two areas of economic and social business growth, has named the "Dan'Cares" Program to be one of its innovative human resource management tools. This program provides health insurance for the greatest health risks of employees, as well as actively presents a global policy of approaches to parental leave. So, we can say that the goal of this company is not only to support the employees' well-being, but also to develop a strategy for positioning "Danone" employees as supporters of the happy life. In such circumstances, arises the question how these managerial innovations

are enshrined at the legal level of enterprises with foreign capital in different countries. In particular, according to the labour legislation of Ukraine, social security of employees is legalized by the additional agreement to the employment contract of the employee, moreover, the main provisions are prescribed in the charter of organizations and in the regulations on accounting policy of the enterprise.

At the same time we want to devote our research to the management of human resources in the educational sphere. As the above described processes won't exist without the initial stage – education. Today, especially under conditions of COVID-19, colleges and universities are of great significance in the development of economic and social spheres. We focused our research on the base of the Chinese universities. We researched before that Chinese universities have been greatly influenced by one of the most important factor – the political system. As a result the various problems in their human resource management are appeared. But the innovative approaches in the management and evaluation of human resources at the universities could effectively promote the level of management in the educational sphere as well as promote the development of qualified universities not only in China, but also in other countries.

Thus, the above mentioned gives confidence that topic of this article is actual. The main aim of this paper is to demonstrate the necessity of the implementation the teacher competency model as the innovative tool in human resource management. This could be reached by investigating international legal and economic experience under conditions of digitalization and applying it in the Chinese educational sphere. This will help to promote the changes into the process of human resource management under digitalization.

The process of human resource management is the topic for discussion of scientists from all over the world in different fields of economy. Thus, the Ukrainian scientists Danilova *et al.*, [4], Mykhailova *et al.*, [5], Mykhailov *et al.*, [6], Stolyarov *et al.*, [7], Zos-Kior *et al.*, [8], Rossokha *et al.*, [9], underline that the transformation of the processes of social and economic development, digitalization of the economy, fast development of labour processes require the creation of new approaches to the development of the labour market, especially staff management models in enterprises. Moreover, the Ukrainian and Chinese scientists such as Mykhailova *et al.*, [5], Mykhailov *et al.*, [6], revealed in their research that it's necessary to develop human capital assets very actively to increase the productivity. Foreign countries financing already the digital education receive significant competitive advantages in the world market, which is especially

important in the context of globalization. Other researchers emphasize the importance of human capital development to ensure the innovative activity of clusters and production.

The Chinese researches Zongkeng *et al.*, [10], made the investigation concerning how the level of socio-economic development of the regions in Guangxi influences on the staff management in the enterprises under conditions of economy's digitalization. It's interesting to admit that they also include such indicator as the legal and economic bases of the personal management. Thus, these scientists gained such results in the following way: they took 14 regions in Guangxi as the research object, selected ten indicators that can measure the level of socio-economic development, established the index system for evaluating the regional socio-economic development level of Guangxi regions used the principal component analysis method, and the cluster analysis method.

At the same time another group of Chinese and Ukrainian researchers Yin *et al.*, [11], hold the proper investigation concerning the importance of long term insurance for the human resource management on the enterprises as one of the motivating tool for employees. The results of the empirical analysis showed the proportion of those willing to participate in the long-term care insurance system with an income of "less than 2,000 yuan" is 65.4%; the proportion of those willing to participate in the long-term care insurance system with an income of "2,000 - 4,000 yuan" is 69%; and the proportion of those willing to participate in the long-term care insurance system with an income of "4,000 - 6,000 yuan" is 74.1%. We consider that these results demonstrates the necessity of implementing new approaches to form the modern model of human resource management. Moreover, these results of the research could be applied only for the responsible staff, the percentage of which comprises only 60% in the company.

Mykhailov *et al.*, [12], Semenov *et al.*, [13], Mayovets *et al.*, [14], Khodakivska *et al.*, [15], in their research found that in order to achieve significant results in the development of the agricultural sector, the priority should be qualitative and quantitative indicators of labour resources using innovative tools of the management process. We share the opinion of scientists, moreover, we believe that in order to ensure the goals of sustainable development, it is advisable to control the process of human and land resources management step by step.

Systematizing scientific publications of the regulatory framework for improving human resource management in banking institutions in the context of

digitalization, such scientists as Kurylo *et al.*, [16], found that one of the effective tools should be the application of the modern customer focus concept to establish the appropriate level of security. Thus, it is necessary to create a model of competence for each employee in the process of human resource management. We would like to note that under conditions of the changeable digital environment, this model should be adapted to the modern challenges of society.

McClelland [17] in 1973 published the article devoted to measuring competency, but not intelligence. After that, research on competency developed rapidly around the world. Competency research in the field of education is the earliest research on the competence of education managers [18]. In the 1990s, researchers began to conduct research on competency models. During this period, researchers focused on general competency models. Researchers mostly studied competence from the perspective of personal characteristics, including: knowledge and skills in related fields, and motivation, Traits, self-image and attitude, etc. In the 21st century, researchers in the field of human resource management began to regard competency as a kind of ability closely related to professional positions. Competency is the ability to enable people to effectively perform activities of a specific occupation or function in a way and achieve or exceeds the expected standard of a specific profession or work environment [19]. In June 2000, Hay/Mcber Corporation submitted a report entitled "High-Performance Teacher Model" to the U.S. Department of Education and Employment, proposing the competency characteristics of high-performing teachers. Herniman and Milanovis proposed strategies to improve teacher competence based on human resources [20].

A bit later Musset *et al.*, [21], Mamta *et al.*, [22], researched the impact of training activity on the person's development in different spheres. They defined that highly competent teachers are not necessarily teachers who have shown good performance behaviors. They should also include teachers with high inherent potential. With the development of society, the workplace is also changing. The outbreak of the new virus COVID-19 has a major impact on the world. This impact is also reflected in the competence of modern college teachers. In the new era, in order to better evaluate local college teachers and provide a basis for teacher selection, appointment, training, and performance management, it is necessary to construct the new competency model [23].

In recent years, Chinese and foreign researchers have conducted in-depth investigations on the competency model of college teachers. For example, Qizong, [20],

Zhengshu, [24], and Hongjian, [25], have studied the teaching competency model of college teachers from different perspectives. Wang Zhenghua, [26], Xiaojuan and Kehua, [27], Xingfeng and Anfu, [28], and Wang and Qiyang, [29], have studied different types of university teachers' victory models. Haiyan *et al.*, [30], and Guang *et al.*, [31], studied the general competency model of teachers as well as the competency model of pre-service teachers. The authors Gryshchenko *et al.*, [32], and Hnatenko *et al.*, [33], proposed a number of methods and tools that can be adapted to the conditions of the personnel policy of the organization. At the same time there still lots of aspects that need to be researched, in particular how to create effective teacher competency model in human resource management under conditions of digitalization.

The article deals with the aim to demonstrate the necessity of the implementation the teacher competency model as the innovative tool in human resource management.

2. Materials and Methods

The methodological platform for conducting our investigation became the combination of generally accepted provisions as well as the principles of economic research, fundamental postulates of economic theory, the concepts of the human resources' management theory, and new approaches to the development of socio-economic processes. All these was followed by the fundamental study of applying specific methodological approaches to the specific argumentation and solving tasks, verifying the given research hypothesis, the content of which is that new teacher competency model in human resource management under conditions of digitalization will become the urgent tool in the process of staff management.

Our research was drawn on the base of the early held investigations, the results of which have been published as well as using the gained experience. In the research method, both quantitative methods and qualitative methods were used. The initial purpose was the exploration of new methods of human resource management under conditions of digitalization, the evaluation supposed to be held in colleges and universities of China by creating the competency model for college teachers. As a result the proposed model supposed to promote the modernization of human resource management in Chinese colleges and universities.

To details the methodology we have to admit that theoretical and methodological basics of our investigation were general scientific and special

methods of certain economic phenomena and processes' cognition. Thus, dialectical method was used in the synthesis of theoretical, practical and methodological foundations concerning human resource management under conditions of digitalization in foreign countries and China, as well as formulating conclusions. We also have used abstract and logical investigation methods of economic process in the field of creating key points and stages of forming the effective teacher competency model in human resource management under conditions of digitalization. Using the method of transformational analysis, we made the adopted mechanism of competence goals' transformation into imperatives in achieving the aim of functioning effective staff management system with the adopted formulation of the vision, concept, and strategy. The usage of tabular and graphical methods, a visual interpretation of the obtained research results were conducted for a better perception of the gained research results.

Moreover, this research used the literature reviewing method, interviewing method and questionnaire survey method to collect the competence entries of local college teachers. Using the Delphi method, an expert group discussed and determined the important indicator system for teachers in local colleges and universities. Then the questionnaire survey method was used to determine the competency dimension and index system of local college teachers through factor analysis. Taking into account described above methodology it became vivid that the purpose of this article was reached by constructing the evaluation index system of university teachers' competence through empirical methods. And these methods were used to collect and organize teacher evaluation indicators in human resource management. Finally there were built standards for teacher human resource management and evaluation through quantitative statistical analysis. Now this standard is able to evaluate teachers' competence very well and at the same time to provide effective tools for teachers' human resource management under digitalization.

3. Results and Discussion

In November 2017, China passed the "Opinions on Comprehensively Deepening the Reform of Teaching Staff in the New Era", which is China's first national document dedicated to the construction of teaching staff. Improving the level of teacher competence is an important way to cultivate excellent teachers, the research and evaluation of teacher competence is a necessary link in the management of teacher human resources. Before the 1960s, competency research usually focused on the intelligence and abilities that can prompt individuals to complete their work efficiently,

focusing on measuring individual competence through work performance and other outcome indicators. The research on competency could be traced back to the exploration of Taylor, the "father of scientific management" in the 1920s. Taylor advocated that management analyze the causes of differences in performance between employees through actions and time. He uses "time and motion study" to split complex work into a series of simple steps to identify the ability of different work activities the requirements [34]. But at that time he only regarded people as appendages of machines, focusing mainly on intelligence and ability, ignoring people's initiative and creativity. In 1954, John Flanagan began to study the competence theory and established a rigorous competency research method, namely, key event behavior interviews [35]. Although Flanagan did not clearly put forward the concept of competence at the time, he provided for later competency research using different methods.

Today creating teacher competency model in human resource management we put into consideration that every employer should follow the information security of the personal employee's data base using international and national legislation in this sphere. Thus, Ahmadov *et al.*, [36], made the stress in their research that according to the Doctrine of Information Security of Ukraine (hereinafter – the Doctrine), information security is an independent sphere of ensuring the national security of Ukraine and at the same time an integral component of each of its spheres. The main goal of the Doctrine is to create a developed national information space in Ukraine and protect its information sovereignty. In addition, the European Commission also proposed the creation of an European Union cybersecurity operations department to coordinate the actions of all countries of the community, deploy a network of operations centers in the EU using Artificial Intelligence for early detection and counteraction of cyber-attacks, and develop new integrated principles for protecting the entire infrastructure of the European Union countries [36]. For instance, Fuster and Jasmontaite [37], Dykan *et al.*, [38], and Kalicheva and Mykhailova, [39], also focused on operational and strategic directions of public management improvements concerning staff management in the sphere of railway industry. Thus, they presented the improvement of legislative and regulatory framework, particular, legislative and legal support as a set of mechanisms that are developed and operated at both the national and international levels. They are divided into compulsory public management of railway transport development based on the principles of the systematic or mandatory approaches like the national laws and regulations, treaty obligations as well as the voluntary (the virtue covenants, codes of conduct, etc.). What

is more important, their competent implementation on practice will form the legal basis that applies to all other elements and components of the existing employment system.

In Klietsova and Volchenko [40], previous research, using the international practice of human resources management in the context of digitalisation as well as the method of expert assessments and analytical methods, we proposed the algorithm of an HR manager's staff recruitment for an enterprise's vacant position in social networks. We proved that in contrast to existing approaches, this methodology involves five basic steps, the usage of which will enable HR managers and executives to avoid the stage of work with staff agencies, will reduce the enterprise's costs on staff recruitment for the vacant position, will form a staff reserve and, at the same time, will make the process of staff recruitment mobile under conditions of digital economy [18]. In the proposed teacher competency model in human resource management we took this algorithm into account and adapted some of its steps under the proposed below scheme.

But in our present research, first of all, we searched the scientific literature during the period from 2010 to 2020 years on Chinese Scientific Network, the largest literature database in China, with the theme of "University Faculty Competency", and obtained the total of 267 articles. With the theme of "University Faculty Competency", the Web of Science database was searched for articles published during the period 2010 to 2020 years, and the total of 422 articles were obtained. After literature reviewing, it was found that 17 of them were related to the construction of competency models, and the statistical results of the dimensions and index system were obtained through the author's research. We sorted out the competency terms of college teachers described in these 17 representative documents, and obtained the total of 343 competency terms (which are the second-level indicators). It should admit that the main sample of our research comprised the works of such authors: Tang Shujun *et al.*, [41], Lijie, [42], Ye and Jun, [43], Xiangyang, [44], Niu and Zhang, [45], Hongmin *et al.*, [46], Anguo, [47], Yan, [48], Hnatenko *et al.*, [49], and Mazur *et al.*, [50]. Through semi-open interviews with a total of 30 university teachers, university human resources management personnel, and education experts, we have obtained 103 words of competency for university teachers. We merged and de-duplicated a total of 462 university teacher competency entries obtained from the two ways, and finally obtained 50 university teacher competency entries. Finally, we use the method of expert group discussion to determine the vocabulary of the core elements of competency from the perspective of university

teachers. Through the research and discussion of the 50 college teachers' competency terms obtained above, the expert team finally retained 30 of them as the characteristic vocabulary of university teachers' competency.

In order to ensure the authority of the research, this research selected 20 experts who are engaged in university educational administration, teaching theory research and working in the front line of teaching as the consulting objects, including 8 men and 12 women. 16 experts are professors and 4 are associate professors. From the perspective of experts' academic qualifications, 18 have doctoral degrees and 2 have master degrees, both with professor titles. All of the experts are master tutors. Generally speaking, the expert group is professionally representative and authoritative.

We adopted the seven-level scoring system of the Richter Scale for the 30 competency entries finalized by the expert group. Among them, 1 point means very unimportant, 4 points means intermediate status, and 7 points means very important. They are compiled into a competency vocabulary questionnaire. The questionnaire survey was conducted with university teachers as the survey subjects. Convenient sampling methods are used to select teachers from more than 20 local universities in 8 provinces in China. In eastern China universities are located in Shandong and Guangdong Province. In central China universities are located in Henan, Hebei and Hubei Province. In western China universities are located in Xinjiang, Sichuan and Chongqing Province. We distributed electronic questionnaires to the teachers and collected 608 copies, which was 100% effective.

Using the descriptive statistical analysis of each variable of the university teacher competency we applied the vocabulary questionnaire on each measurement index. Thus, the average data could show us the respondents' understanding of the importance of competency vocabulary. The higher the score, the more important the respondents think. We revealed that the average importance of each competency vocabulary and the difference in the surveyed opinions on them are the basis for the analysis of the competency of teachers in local universities. This research divides the recovered 608 competency vocabulary questionnaires into two groups using SPSS random sampling. 312 data whose grouping variable are "0" is sample A, and SPSS Statistics 22 is used for exploratory factor analysis to determine the structural factors of the scale. Other 296 data with the grouping variable "1" is sample B. SPSS Amos 23 is used to perform confirmatory factor analysis to test whether the factor structure model of the scale is consistent with the actual data collection

results. The statistical software SPSS Statistics 22 was used to perform exploratory factor analysis on sample A, KMO test and Bartlett's spheroid test were carried out. The KMO value was 0.9949, and the P value of Bartlett's spheroid test was 0.00, which is very suitable for factor analysis.

Exploratory factor analysis is to clarify the structural validity of variables and verify the rationality of related items. The sample size selected for this exploratory factor analysis is 312, and the sample size is 10.4 times the number of variables, which meets the requirements of the required sample size. According to the screening criteria of exploratory factor analysis, after multiple factor analysis, four factors and 22 indicators were finally extracted. The cumulative explanation variance of the four factors is 73.974%, which passed the validity test of exploratory factor analysis. The results are shown in Table 1.

Using sample B with a random grouping variable of "1", the four dimensions of the competency vocabulary questionnaire were used to perform confirmatory factor analysis. The measurement model analysis results are shown in Figure 1.

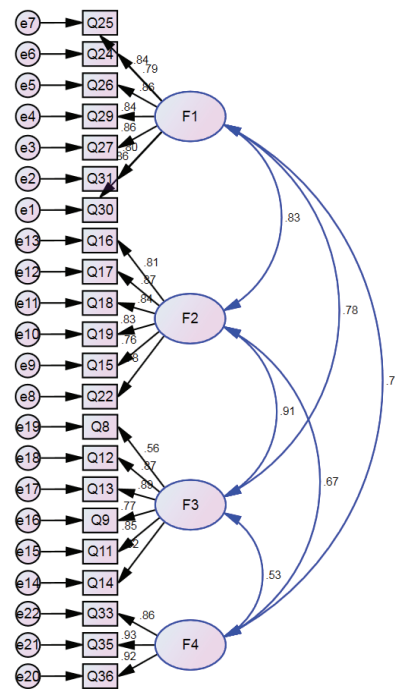


Figure 1. The confirmatory factor analysis of university teachers' competency
Source: compiled by the authors

Table 1. Exploratory factor analysis results of teachers' competency in local universities (N = 312)

Measurement standard	Original data				Rescaled			
	1	2	3	4	1	2	3	4
The ability to obtain and use information	.572				.784			
Creative thinking ability	.595				.738			
Logical analysis ability	.527	.309			.702	.411		
Master the frontier dynamics of the subject	.579				.688			
Critical thinking skills	.579				.685			
Research persistence and focus	.571				.673			
Ability to find and solve problems	.489				.651			
Interpersonal communication skills		.743				.847		
Teamwork		.613				.719		
Self-confidence		.527				.697		
Compressive ability		.537				.676		
Caring for students		.372				.563		
Sound personality		.376				.557		
Respect for education			.624				.772	
Teaching methods and skills			.497				.669	
Learning ability			.437				.656	
Classroom organization	.308		.483		.408		.639	
Language expression skills			.444				.624	
Professional knowledge reserve			.395				.596	
Promote school-enterprise cooperation capabilities				.995				.845
Scientific research transformation ability				.946				.814
Project management ability	.458			.815	.422			.752

Source: compiled by the authors.

Among them, the $\chi^2 = 693.656$, $df = 203$, and $\chi^2/df = 3.417$, which is less than 5, and the model fit is acceptable. Among other fitting indexes, RMSEA = 0.091, NFI = 0.891, CFI = 0.920, GFI = 0.826, and the t value of each parameter is significant. It can be seen that the model has a better fitting effect. The factor structure shown in Figure 1 has been verified, that is, the division and measurement of the four dimensions and 22 indicators of college teachers' competency proposed in this study is effective.

Reliability analysis is performed on sample A, and the results are shown in Table 2. The CICT of all items is greater than 0.35, and the Cronbach's a coefficient of all dimensions is greater than 0.6. However, after deleting the item, only the Cronbach's a coefficient of "love education" increased. After discussion by the expert group, the expression of this item was considered to be too macro, and it was revised to "love Teaching". The Cronbach's a coefficient decreased after the deletion of each of the remaining items, indicating that the variable measurement was consistent.

The reliability analysis of sample B is performed, and the results are shown in Table 3, which are consistent with the reliability analysis results of sample A.

Through the exploratory factor analysis and confirmatory factor analysis of the "university Teacher Competency Vocabulary Questionnaire", this research initially constructed a university teacher competency model consisting of 4 competency dimensions and 22 competency indicators. So gave the appropriate understanding of F1, F2, F3, and F4 in the Table 3. So, after discussion by the expert group, we named F1 as Scientific Research Competency, F2 - named the Basic Competency, F3 - as Teaching Competency, F4 - as Social Service Competency.

We finally got the four dimensions of the competency of teachers in local universities in China: Scientific Research Competency, Basic Competency, Teaching Competency and Social Service Competency. They contain a total of 22 indicators (Table 4).

Table 2. Reliability test of exploratory factor analysis (Sample AN=312)

Factor	Items	Total correlation coefficient (CICT)	Cronbach's a value after deleting this item	Cronbach's a coefficient
F1	The ability to obtain and use information	.794	.929	.938
	Creative thinking ability	.816	.927	
	Logical analysis ability	.825	.926	
	Critical thinking skills	.771	.931	
	Master the frontier dynamics of the subject	.773	.931	
	Research persistence and focus	.812	.928	
	Ability to find and solve problems	.808	.928	
F2	Interpersonal communication skills	.622	.891	.896
	Teamwork	.764	.871	
	Self-confidence	.769	.869	
	Compressive ability	.751	.872	
	Caring for students	.773	.868	
	Sound personality	.649	.888	
F3	Love Teaching	.439	.894	.872
	Teaching methods and skills	.680	.850	
	Classroom organization	.718	.843	
	Learning ability	.802	.827	
	language expression skills	.773	.832	
	Professional knowledge reserve	.673	.851	
F4	Promote school-enterprise cooperation capabilities	.802	.907	.917
	Scientific research transformation ability	.858	.859	
	Project management ability	.842	.875	

Source: compiled by the authors

Table 3. Reliability test of confirmatory factor analysis (Sample BN=296)

Factors	Items	Total correlation coefficient (CICT)	Cronbach's a value after deleting this item	Cronbach's a coefficient
F1	The ability to obtain and use information	.738	.937	.940
	Creative thinking ability	.810	.931	
	Logical analysis ability	.841	.928	
	Critical thinking skills	.845	.928	
	Master the frontier dynamics of the subject	.804	.932	
	Research persistence and focus	.837	.928	
	Ability to find and solve problems	.764	.935	
F2	Interpersonal communication skills	.719	.916	.923
	Teamwork	.786	.907	
	Self-confidence	.830	.901	
	Compressive ability	.808	.904	
	Caring for students	.797	.906	
	Sound personality	.738	.914	
F3	Love Teaching	.545	.922	.910
	Teaching methods and skills	.767	.892	
	Classroom organization	.818	.884	
	Learning ability	.808	.885	
	language expression skills	.806	.886	
	Professional knowledge reserve	.769	.892	
F4	Promote school-enterprise cooperation capabilities	.820	.925	.929
	Scientific research transformation ability	.888	.871	
	Project management ability	.857	.895	

Source: compiled by the authors.

Table 4. The Competency Model of University Teachers in China

Dimension	Index number	Index
Scientific Research Competency	1	The ability to obtain and use information
	2	Creative thinking ability
	3	Logical analysis ability
	4	Critical thinking ability
	5	Master the frontier dynamics of the subject
	6	Research persistence and focus
	7	Ability to find and solve problems
Basic Competency	8	Interpersonal communication skills
	9	Teamwork ability
	10	Self-confidence
	11	Compressive ability
	12	Love students
	13	Sound personality
Teaching Competency	14	Love teaching
	15	Teaching methods and skills
	16	Classroom organization
	17	Learning ability
	18	Language expression skills
	19	Professional knowledge reserve
Social Service Competency	20	Promote school-enterprise cooperation capabilities
	21	Scientific research transformation ability
	22	Project management ability

Source: compiled by the authors.

According to our research results, the competency of teachers in local universities in China consists of four dimensions: Basic Competency (B), Teaching Competency (T), Scientific Research Competency (R), and Social Service Competency (S), with a total of 22 indicators (Figure 2).

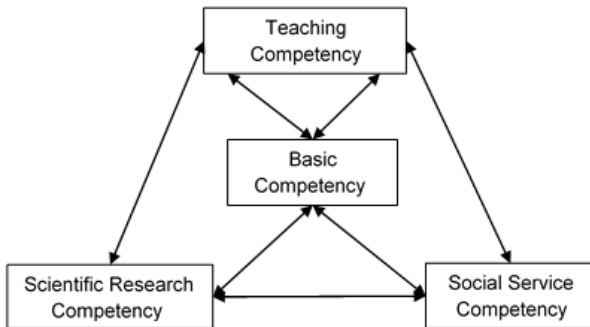


Figure 2. The Relationship Between B+(T+R+S)
Source: compiled by the authors

Analyzing the information in the Figure 2 we defined these four dimensions and their interrelationships reveal the inherent logical relationships and characteristics of the competency of teachers in local universities in China. The competency of teachers in local universities is formed by the interaction of four dimensions: basic competency (B), teaching competency (T), scientific research competency (R) and social service competency (S) in a certain logical relationship. The B+(T+R+S) model is used. The B in this model refers to the basic moral and psychological qualities that a university teacher must possess. The teaching competency, scientific research competency and social service competency (T+R+S) are the competencies that local universities must have in their work, which we call professional competency.

Teachers are the most important organizers and participants in daily work such as education and teaching [51], scientific research and social services in colleges and universities. Therefore, they should have professional knowledge and skills such as teaching competency, scientific research competency, and social service competency. At the same time, they should also have certain moral and psychological qualities. Competencies are not isolated from each other (Figure 2). Teaching competency is the most important competency of teachers in colleges and universities, but it will increase with the improvement of teachers' scientific research competency and social service competency. Scientific research competency and social service competency are mutually promoted. The improvement of scientific research level can promote teachers' ability and level to participate in social service, and provide more projects and products for social service even under conditions of digitalization. Social

service competency can also be used for scientific research and provide more practical experience. Basic competency are the psychological and moral qualities that teachers in local universities must possess. They have an impact on various professional abilities. They reflect the basic competencies of teachers in teaching, scientific research, and social service activities.

4. Conclusions

Summing up the results of the held investigations concerning human resource management, its international economic and legal experience on the examples of the Chinese universities under digitalization we came to the following conclusions.

- Teachers' grades, intelligence and abilities should certainly be the criteria and basis for evaluating teachers under conditions of changeable digital surrounding, while competency is the comprehensive manifestation of teachers' external and implicit qualities.
- This research combines qualitative and quantitative research, and finally explores the competency model of Chinese university teachers. The method of factor analysis of data allowed us to form the own model of competence of teachers at the Chinese universities.
- The proposed model has got four dimensions, such as: basic qualities, pedagogical competence, research competence and competence of social service; as well as contains 22 indicators of second-level competence.
- This model, unlike existing ones, takes into account all research results and doesn't ignore the possibility of employees' professional development, even in the case of low rates of every person.
- Usage of the proposed model on practice will allow human resource professionals not only to pay attention to the current assessment of the performance of university teachers, but also to be the effective tool for comprehensive assessment of teachers' competencies under conditions of digitalization.

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