
Construction of Competency Model for Knowledge Worker

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Abstract

The development of enterprise is the basis of national revitalization. With the knowledge enterprise play an increasingly important role in the knowledge economy, knowledge workers gradually become the main body of knowledge enterprise. In this background, it is urgent and important to study how to foster and enhance the effective competency of knowledge workers. At the beginning of this paper, the role of knowledge workers are determined by taking the company's strategy. This study examines the job descriptions and requirements posted for Knowledge Workers in China. Based on the data extracted from small and medium corporations, this paper found that the requirements relating to experience and academic preparations of Knowledge Workers are different. A deep analysis about job requirements including education background, personal abilities and work experience was made to discovery the requirement trend for Knowledge Workers.

Keywords

Knowledge Workers, Competency Model, Organizational Performance, Job Requirements.

1. Introduction

It is competition of talents that will be the most intense competition among enterprises in the information age in 21st century. An excellent Knowledge team is the key to survive in the market and maintain an important guarantee for sustainable development for a long time [1]. However, the work of knowledge workers is different from ordinary employees. Their work is intelligent labor, the work process is difficult to supervise, and the results are difficult to quantify. The effect of work depends on many factors [2]. Therefore, the study of how to continuously cultivate and enhance the effective work of knowledge-based staff capacity is very urgent and important. In order to cultivate and enhance the ability of knowledge workers, it is necessary to establish the competency characteristics of knowledge workers, and to construct competency model of knowledge workers. In this way, for enterprises, to help establish a competency-based human resources development and management of new mechanisms to achieve in the process of human resource development and management of the selection of conditions, the development of a basis for evaluation of a ruler ; For knowledge workers, competency model indicates the direction of their efforts to understand what they should have the competency characteristics, and encourage the combination of competency model for their own gaps, there are plans to learn to target and grow, Better improve their level of competence, and promote personal career development.

In addition to this introduction, the article is structured in the following three sections. First, a reasonable role is given based on the main line that corporate strategies carried out at the beginning of this article. Second, a detailed analysis on the job requirements to knowledge workers in different companies was presented. Finally, a rational conclusion is given and the significance of this study is presented.

2. Literature Review

2.1 Research on Competency Model.

Different scholars have different opinions about what is the competency model. Mc Clelland (1973) argues that competency models are a set of related knowledge, attitudes, and skills that affect a person's main part of the work, related to job performance, measured reliably, and trained and developed while science and science Management of human resource management to improve [3]. Spencer(1993) argues that the competency model characterizes the motivations, traits, skills, and abilities that distinguish between those who perform well and those who perform well, and a set of behavioral characteristics that are required by a particular job or level [4]. Truss et al.(1997) argue that the competency model describes a unique combination of knowledge, skills, and characteristics needed to effectively perform a particular organization's work [5]. Because of the different definition of competency, the competency model of the competency model is different, so the difference of the competency model is also great [6].

On the competency model research, foreign started earlier, a representative of the research results are: Yukl(1989) will be summarized as a competency management skills, interpersonal and concept three categories [7]. Spencer(1993) summarizes their 20-year research results and proposes five generic competency models, including professional technicians, salespeople, Community service workers, managers, and entrepreneurs [4]. Paul Sandwith (1993) defined the competence of managers as five domains: conceptual, leadership, interpersonal, administrative, and technical, through a study of a large organization [8]. Lawson and Limbrick(1996) studied competency models for high-level human resource managers, including target and action management, proficiency in human resource technology, functional and organizational leadership, influence management, and business knowledge [9]. McClelland(1998) used behavioral interviewing to help the two multinationals establish a competency model for senior managers [10].

On the competency model of the study, the domestic start, although relatively late, but experienced from a simple introduction to Western theory to understand the Western theory, based on the actual situation in China with the establishment and development of their own theory and model Type, which has a representative research results are: Shi Kan, Jicheng Wang and Chaoping Li(2002) used the behavioral event interview method (Behavior Event Interview, Referred to as BEI), China's telecommunications industry management cadre competency characteristics of an empirical study [11]. Wang and Chen(2002) analyzed the characteristics of managerial and managerial competency, The results show that the managerial competency is composed of management quality and management skill. However, different levels of managers have different structural elements in specific elements [12]. Zhong(2004) adopted the BEI method to study the competency model of the senior managers of family firms. The results show that it is consistent with the general competency model of the top managers of foreign enterprises and is consistent with that of the state-owned enterprises And the authority-oriented and benevolent care is the unique competency characteristic of the senior managers of Chinese family-owned enterprises [13]. Feng(2002) studied the competency model of middle managers in state-owned enterprises [14]. Song(2003) used a questionnaire survey to explore the empirical study of the competency of middle managers in Chinese cultural contexts [15].

2.2 The Definition of Competency Characteristics of Knowledge Workers.

The definition of competency characteristics will directly affect the construction of competency model of knowledge workers. Therefore, it is necessary and necessary to clearly define the connotation of competency characteristics of knowledge workers in human resources development research based on competency characteristics.

Human resources development activities to improve personal performance as the beginning, to improve the performance of the entire organization to the end. Therefore, it is possible to derive the

process of organizational performance from the organizational performance and vice versa, so as to get the connotation of competency characteristics of the knowledge-based employees in human resource development activities. First, we focus on the formation of organizational performance. Organizational performance is the output of a number of individual performance, which means that organizational performance can be considered as all its members Performance of the integrated output. Of course, we must admit that other factors (such as political, economic and technical factors) also affect the performance of the organization, but here we are concerned about and explore the performance can be at the individual and organizational levels of control Performance. Second, we focus on the formation of individual performance. Individual performance in an organization is the result of a series of actions by an individual in an organizational context, and only when the member of the organization chooses to favor the organization .Last, personal behavior can be transformed into individual performance. Again, we focus on the formation of individual behavior. What happens to an individual depends on how the individual is characterized. In the complex work environment, especially knowledge processing, processing, production and other activities, knowledge workers choose the specific behavior and the timing of the effectiveness of the behavior depends on the implicit and explicit personal characteristics, including personality, knowledge, Skills, attitudes, beliefs, social awareness and so on, see [Fig. 1](#).

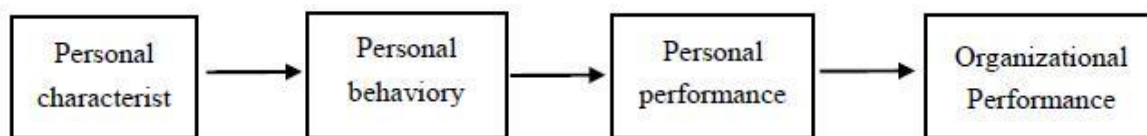


Fig. 1 Competency transformation process

It can be seen from Fig. 1 that to achieve the ultimate goal of human resource development activities, we must start from the input of personal characteristics to define the competency characteristics of knowledge workers, so this paper defines the competency characteristics of knowledge workers as follows: in specific enterprise strategy and In the context of corporate culture, a collection of personality traits that drive knowledge workers to use various work methods and behaviors to produce excellent job performance reflects the knowledge, skills, motivation, personality, and internal drive that can be expressed in different ways. The competency of knowledge workers is the core concept of this paper, so it is the logic starting point of human resource development research based on competency characteristics. The definition of the content mainly includes the following points.

(1) Emphasizes the contribution of competency to organizational performance. This paper is concerned with the competency of knowledge-based staff characteristics, not all of its competencies, but refers to the organizational performance-related competencies. If a Knowledge workers have superior skills in cooking, but this is not the competency required to achieve the enterprise strategy, and has no contribution to the promotion of enterprise performance. Such competency is not considered in this paper.

(2) It clarifies the relationship between knowledge workers' competency and organizational strategy. On the one hand, the organization strategy determines what kind of competency characteristics knowledge-based employees need to develop; on the other hand, the development of knowledge workers' competency also supports the realization of organizational strategy. Therefore, the two are complementary, separate emphasis on any one aspect is unscientific. Based on the concept of "knowledge worker competency", the research on human resources development effectively solves the controversy about the relationship between organizational strategy and human resource management practice in strategic human resource management.

(3) This paper highlights the versatility and specificity of knowledge workers' competency. Earlier studies on competency were more concerned with general competence, and Boyatzis was one of the representatives. Jacobs(1989)questioned Boyatzis's general competency model, which he used in more than 500 UK organizations, to find that different managerial competencies required different competencies, demonstrating the situational dependence of competency , That is to say, it can not

produce high performance only by the general competence. Therefore, this paper points out that the competency model of knowledge workers is formed under the "specific corporate strategy and corporate culture background", emphasizing the specificity of the competency characteristics. At the same time, it also acknowledges the interpretation of GM competency to individual performance. Therefore, the competency characteristic of the knowledge-based employees concerned in this paper is the organic whole of the specificity and universality, which is embodied in the construction of the follow-up competency model research frame.

(4) This paper illustrates the multiple attributes of knowledge workers' competency characteristics. Knowledge, skills and other external competencies are easy to appear, has been the organization and individual attention; motivation, personality, internal driving force and other inherent competencies not easy to show, but often on the formation of individual performance has a decisive role, both inside and outside competencies Organic unity.

3. Analysis for Competency of Knowledge Workers

In order to analysis the competency of Knowledge Workers, this paper select Knowledge Workers' job recruitment information of 483 positions in 102 companies in China, which include 249 positions in 61 small companies and 234 positions in 41 middle companies. We measure the competency of Knowledge Worker from three aspects such as educational background, work experience and some important personal characters.

3.1 Educational Background.

Different types of enterprise have the different requirements for Knowledge Workers' educational background in different positions. These qualifications are generally divided into three categories: associate degree, bachelor degree and master degree. Though making an analysis and comparison to those 483 positions, we got the proportion of different education background in small and middle companies, see Fig. 2.

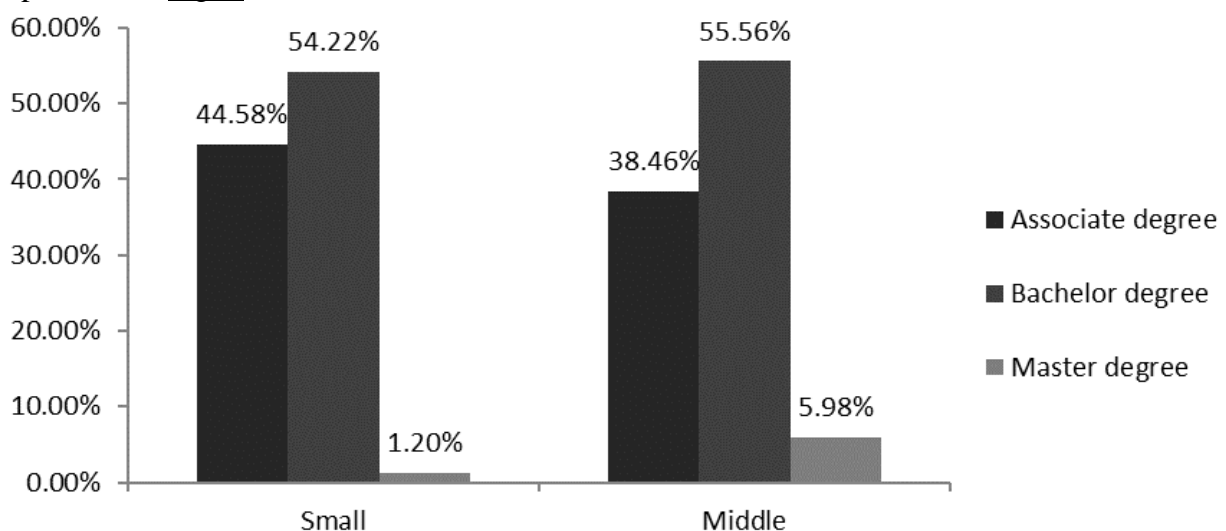


Fig. 2 Requirements of different types of companies for degrees

It is not hard to find that the larger the company, the higher the degree required. Associate degree and bachelor degree occupy almost all the Knowledge Workers in small companies. In medium-size companies, bachelor degree is the main part and master degree is starting to be possessed.

3.2 Work experience.

Employees with very good working experience are very popular with the company especially to management. Because work experience is a symbol to make sure that work flow and result are under control. This is no doubt that the higher position will be, the more rich work experience will be owned. Work experience is one of the most important experience for Knowledge Workers. However,

considering the different strategy of different-sized companies, there are some distinctions in work experience. We get the requirement for Knowledge Workers’ work experience based on the analysis and statistics of 483 Knowledge Workers’ positions demand. Professional expertise means a series of basic cultural sciences and Knowledges that are related to work activities and daily work in general science for Knowledge Workers, see [Fig. 3](#).

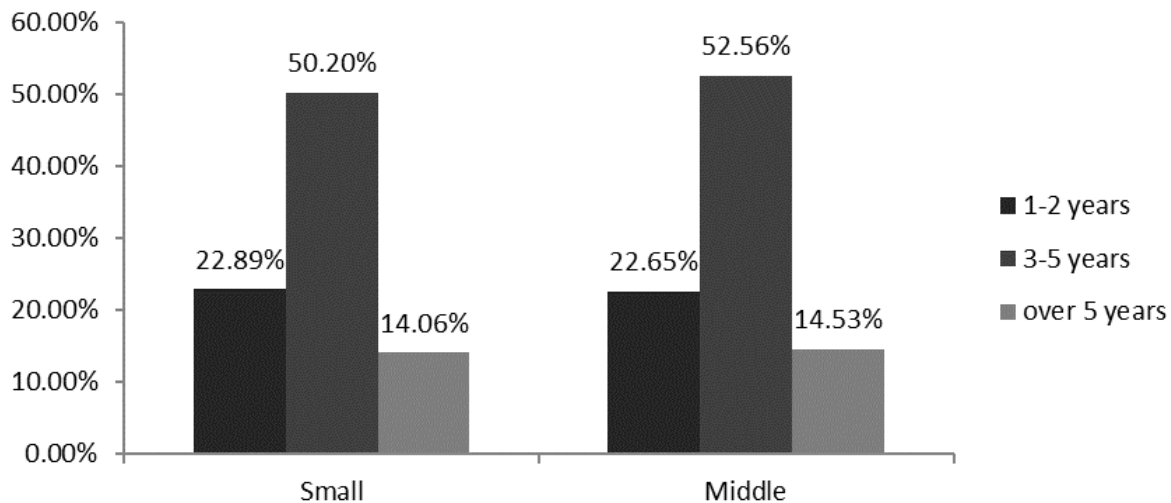


Fig. 3 Requirements of different types of companies for work experience

3.3 Knowledge Workers’ personal characters.

A qualified Knowledge Workers must have some good features or characters which constitute the competences for Knowledge Workers to finish the job well. Competency is a set of various personality characteristics which can drive staffs to produce outstanding work performance. It reflects the knowledge, skills, personalities and inner drives etc. It also can be expressed through different ways. What is needed to explain for this competency model is that the organizational teams need what kind of people who should possess what type of capacities or competences to do outstanding work.

Fully analyzing the job requirements in the 483 positions of Knowledge Workers, we found 15 characteristic elements that relate to the managers’ ability, analyzing by SPSS software, see [Table 1](#).

Table 1 Analysis on the Significant Characteristics of Competency of Knowledge Worker

Characteristics	Significance	Characteristics	Significance
Related Professional Background	.000	Communication skills	.005
Familiarity with Work Processes	.008	Analysis and Decision Making	.032
Learning and Innovation	.065	Teamwork	.034
Problem Solving	.093	Clear and logical thinking	.077
Dedication and Hardwork	.025	Wide insight	.126
Personal character	.032	Enterprising	.247
Responsibility	.044	Cohesion and appeal	.308
Ability to handle pressure	.019		

Note: *. Significantly correlated at 10% level (both sides).

From Table 2, we can see that there are 12 trait indexes which have passed the test at 10% significance level, so as to construct the radar map of the competency characteristics of knowledge workers, see [Fig.4](#).

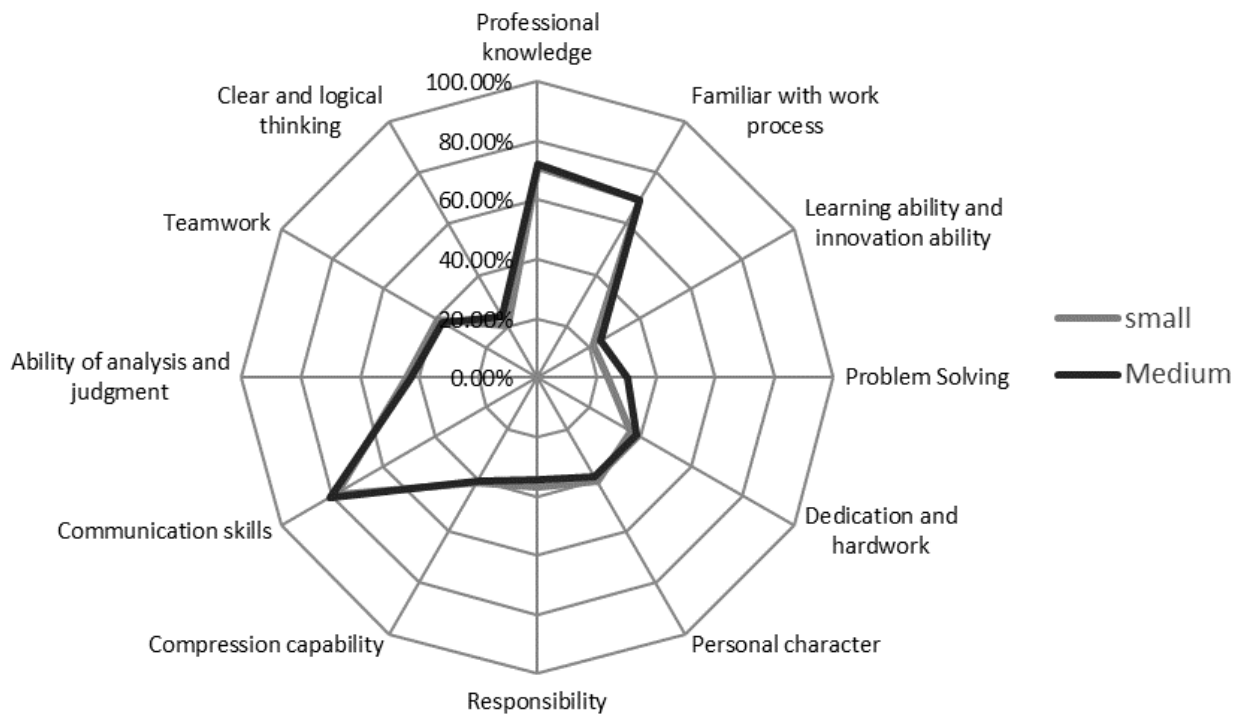


Fig. 4 comparison of all sorts of personal character in different companies

4. Model Construction

4.1 Structural Equation Modeling.

First, the reliability analysis of the sample data, the Cronbach's Alpha value is .753. On this basis, building structural equation model by the amos software, see Fig. 5.

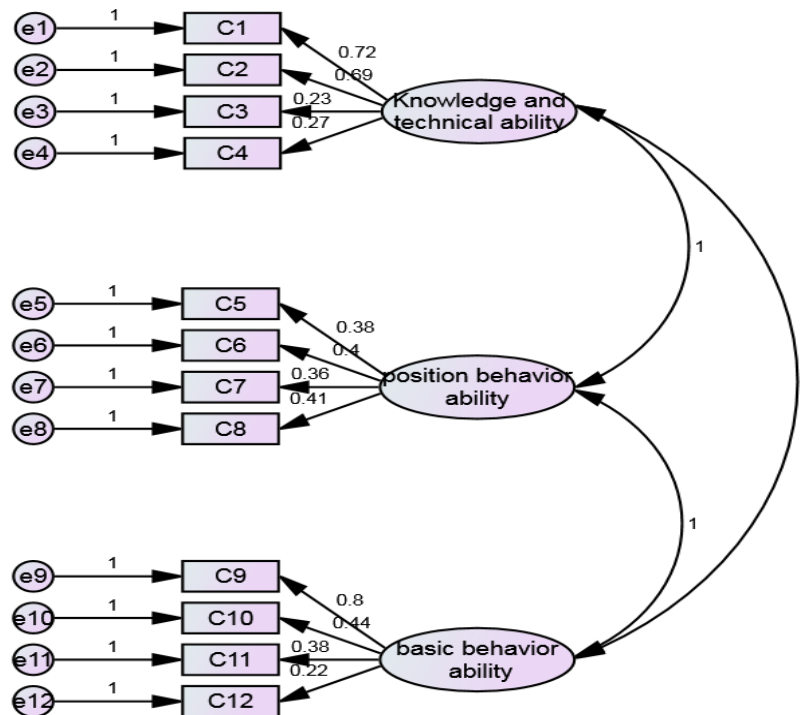


Fig. 5 Structural Equation Modeling

From the three dimensions, in the dimension of professional knowledge and skills with significant difference, except for Problem Solving, the scores of other characteristics are higher; in the dimension of professional conduct ability, the four traits have higher requirements; in the basic behavioral capacity Dimensions, with the exception of Clear and logical thinking requirements are lower, the other feature scores are higher.

4.2 Competency model of knowledge workers.

In this framework, the competency characteristics of knowledge workers are divided into three main dimensions, namely, knowledge and technical ability, position behavior ability and basic behavior ability. The concrete connotation of knowledge employees is defined as follows. Knowledge and technical competence refers to the ability to acquire knowledge, process capability and industry knowledge applicable to positions in the organization's fields of expertise. The knowledge and technical ability in this paper includes two aspects: explicit and implicit. The specific knowledge and technical ability varies according to the nature of the work, the position and the content of the task. Many of these abilities belong to special abilities. Positional competence refers to the different positions of knowledge enterprises, showing the motivation, personality, internal driving force, which are different from other positions. This type of competence is more versatile than knowledge and technical capabilities, and the importance of different types of job competencies to specific positions depends on the nature of the particular job. Basic capacity refers to all the positions applicable to knowledge-based enterprises, showing the ability to adapt to the core values advocated by knowledge-based enterprises, such as teamwork, continuous innovation and other behavioral capacity. If a knowledge worker cannot be compatible with the core values advocated by knowledge-based enterprises, even if the other aspects of the ability is very prominent, it is difficult to cut a striking figure in the enterprise to achieve business expectations performance, see Fig. 6.

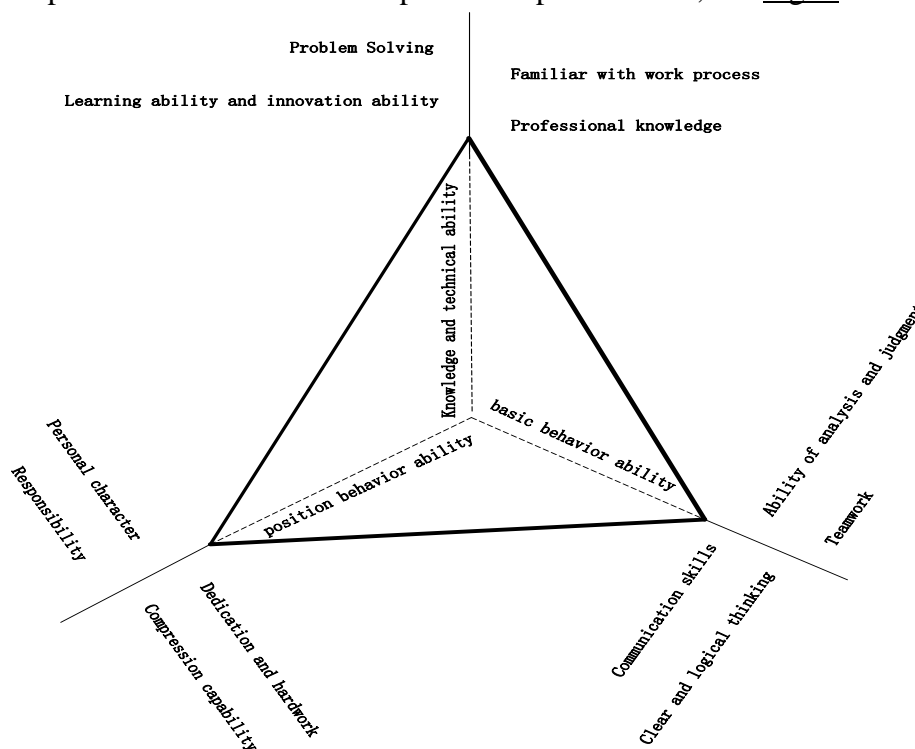


Fig. 6 Competency Model of Knowledge Worker

5. Conclusion

On the basis of related literature, this paper gives a general frame of knowledge employee competence competency model. Under this framework, the connotation of competency of knowledge workers is

defined, and a three-dimensional framework of competency model of knowledge workers is established, which includes three dimensions: knowledge and technical ability, position behavior ability and basic behavior ability. Based on the following analysis, a knowledge worker competence model is constructed.

(1) Exploring the possible structure of specific factors within each dimension through exploratory factor analysis. (2) Confirmatory factors, analysis of the structure of the possible factors to verify, and analyze the relationship between factors. (3) On the basis of obtaining the specific factor structure of the competency model of knowledge workers, the research results are combined with the modules of human resource management to better guide the knowledge-based enterprises to carry out human resources development activities based on competency characteristics, It will be the future in the practical level of applied research.

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