

Study on Human Resource Niche Concept and Evaluation Indexes

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Abstract: Human Resource Management is experiencing the significant thought transformation from approaches "job-based" to "competency-based". Under the high and dynamic knowledge-based economy and people-oriented background, competency-based Human Resources Management thought urgently needs a brand-new carrier which can guarantee it to be carried out in the operation, in the ecology, the mature niche theory which has built a precise and quantitative analysis system may exactly play this role. On the basis of organizational niche, this paper defines the concept of the Human Resource Niche and studies the classification and level of Human Resources Niche, selects its evaluation indexes through literature research and expert judgement, produces its evaluation system by investigation, examines the index system by empirical study and selects the index system.

Keywords: Competence, Human resource niche, Organizational niche

1 Introduction

In 1894, Streere's interpretation of the bird species separation phenomenon in the Philippines has aroused the research interest in niche^[1]. In studying the ecological relationship of long-tailed accentors in California in 1917, Grinnell gives the first clear definition of niche^[2]. Since then, the debate of niche concept has been the focus of research. Besides the space niche concept, Charles Elton's (1927) function niche^[3], and Hutchinson's (1957) super-size multidimensional niche are also widely recognized^[4]. M.T Hannan et al. (1977) firstly presents the concept of niche in the relationship research of competition, cooperation and symbiosis in organization community^[5]. Joel, Singh et al. (1994) points out that organization community can be regarded as the aggregate of many organizational niches in a multidimensional resources space, and any organization also has its smaller micro-niche^[6].

With the era of highly dynamic knowledge economy coming, the management ideas are undergoing the fundamental transformation from "object-oriented" to "people-oriented". The basic tool of human resource management-appraising theory and technology are also in the significant period of changing from "job-based" to "competence-based". Until now, the great difficulty in competence appraising is the choice of factors and methods, and the current competence appraising models can't effectively solve the co-existence of team members in a community, but using the niche theory, this question can be solved easily.

2 Summarization of organizational niche

2.1 Development of organizational niche concept

The theory of organizational niche came of the relationship research between organization and its environment, and came as Darwinism applied in organization community. (Carroll and Hannan, 1995)^[5] The overseas study of organizational niche has been going on the macro-micro two-tier routes.

Chinese scholar Wan Lun-lai defines the organizational niche in the view of the core competitiveness of organization^[7]. Yan An defines the organizational niche in the view of spaces and functions^[8]. Scholars' definitions of niche are the developments of Hutchinson's super-size multidimensional niche, and they still maintain a high degree of consistency.

2.2 Application of organizational niche

In the study of organizational ecological system in 1990's, organizational niche started to be integrated into enterprise management. Lichtenstein, Gregg Arnold utilized organizational incubator to simulate organization ecological factors, and study the relationship between different organizations, and research entrepreneurship^[9]. Suan & Tan Sen applied the principles of natural ecosystems to organizational activities^[10].

The practical application of organizational niche are focused on the study of niche width, niche density and niche overlap, which are used to discuss the adaptability of organizational forms to the environment and the relationship between niche overlap and the culling ratio. In the description of organizational competition-cooperation relationship, the organizational living status, and the core competence, the niche theory is of significance and has a unique perspective, which has already greatly interested the researchers in the field of organization development. For example, Xia Shun-feng (2003) measures the organizational niche breadth from organizational system functions, the organizational situation, and the organizational resource control^[11]. Wan Lun-lai (2004) measures from the following three dimensions: organizational viability, organizational development capability, and organizational competence, aided by relative index system and linear^[7]. On the basis of series outcome.

3 Introduction of human resource niche

Under the high dynamic background of knowledge economy, the management thoughts are certain to transform from "object-oriented" to "people-oriented". Competency-based human resources management will substitute job-based one, and become the mainstream in

the field of management.

3.1 Job-based human resource management idea

Job-based evaluation thought came from Tylo's scientific management, whose core ideas are that organization is polymer of work, and the individual value being reflected by adapting to the job. Thus resulting evaluation thought and technology are also work-based, which is the basic individual evaluation idea of subsequently developed Western business management and public administration.

3.2 Competency-based human resource management idea

Harvard University psychology professor McClelland (1973) first challenged the "work as the center" evaluation idea, he pointed out utilizing competence instead of intelligence as assessment criteria, which shook the evaluation idea and technology of "work as the center" (Mirabile, 1997)^[12]. Competency-based evaluation idea has led a revolutionary change in modern evaluation system. This idea regarding organization as polymer of competence and its focus on competence and its growth, especially suite to high dynamic and people-oriented features in the era of knowledge economy.

3.3 The need for human resource niche

Regarding competence as evaluating yardstick is an important transformation in management thought, and is integrated into the great social development. However, the current study shows that most of the results are focused on defining the concept of competence and its classifications, but few on specific evaluation technologies and operation.

The current competence studies are unilateral by always separating individual from organization, and dividing the source of competence from its environment. In the existing evaluation models, people pay more attention to specialized competence than general competence, concern about the combined score of various competences, and overlook the analysis of competence structure. In the use of competence assessment results, the combination of competences is always relative to a single promotion channel, while the vertical professional development and enhancement is always ignored. This often leads to internal excessive competition, which leads to "zero sum game", and do harm to teamwork.

Niche theory in ecology, particularly in plant ecology has a mature evaluation criteria system which, to date, has been cited in the social sciences. In biology, niche is used to assess viability of species, to explain the species adaptability to environment and the biological symbiosis. This corresponds to "win-win cooperation" in business. We therefore hope that from the perspective of niche, we can break a new path in human resource evaluation and management on the basis of "competence".

4 The conception of human resource niche and its connotation

Ecosystem was put forward by the Britain biologist A.G. Tansley (1935). It refers to the function system including the interaction between organisms or organism with its environment^[13]. In the system composed of human resource and its environment, this interaction and the transformation among material flows, energy flows and information flows also exist. In view of this, in our early study, we have defined human resource ecosystem, preliminarily analyzed the system structure and its adjustment mechanism, which lays the foundation for the application of niche concept in human resource management.

4.1 The definition of human resource niche

In the year of 2004, on the basis of the research and application of human resource management practice in many enterprises, we illustrated human resource ecosystem and defined the concept of human resource niche for the first time^[14]. Then in the latest studies of enterprise practice, we use human resource niche to explore human resource management system. In this paper, we will further define human resource niche as the specific position in a particular environment.

This specific position mainly reflect individual viability, in addition to that, it also includes other influence factors: the degree of resource control within a particular environment, the function limits, the opportunity costs of leaving. It can be described in mathematical formula as this:

$$N = f(x_i) \quad (1)$$

N is appointed as the individual niche in a particular environment. x_i is appointed as the niche factor determining the special position of individual in particular environment.

This definition is the development of super-size multidimensional niche, and highlights man's active control. According to the scope of this study, we can divide human resource niche into individual niche and species niche, and the latter can be looked as the former's assembly. In this article, if there is no exceptional note, human resource niche is referred on individual level.

4.2 The classification of human resource niche

Each niche factor has a threshold. All thresholds form the ideal individual niche N_l . The actual sizes of the niche factors constitute the realistic individual niche N_x . When people occupy their ideal niche, they can play their potential to the utmost. But in an organization, individual is always facing competition, therefore ideal niche is subject to other factors and is therefore suppressed

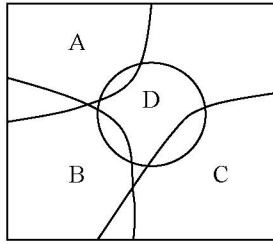


Fig.1 Ideal niche and realistic niche applied field

In Fig 1, the ideal niche of individual D is figured by the center circle, and his realistic niche is the junction district of the internal curve and the center circle. By the effect of individual A,B,C, individual D has to compress his niche space. Generally, affected by the competition prejudice, mutual exclusion, and other infaust factors, the realistic niche space is smaller than the ideal one. From the mathematical perspective, there is a linear relationship between the two niches:

$$N_x = F(E, N_I) \quad (2)$$

E is appointed as the scene variables for specific organizations, including the organizational niche, and the resources given by organization.

For an organization, to identify, change and utilize employees' niches, to help them to find their realistic niche will have more effect on human resource management.

4.3 Human resource niche's levels

As other biological species, human resources niche also has clear levels. To clearly express these levels, we put all niche factors of an individual onto the same plane. The length of every horizontal axis represents the value of corresponding individual niche factor, and the area can describe the quality of the individual niche. Thus, we can use the following figure to describe the human resource space system.

As shown in Fig 2, individual niche can be divided to n factors. Any change of external environment, organization and individual would cause the displacement of niche. People living on higher levels need greater ecological space, otherwise they wouldn't continue to be on this level. In Fig 2, the upper, the wider is the niche, and the more ascendant position of individual is. Correspondingly, various subsystems of human resource management should change with the displacement of human resource niche too.

5 The evaluation system designing of Human resource niche

5.1 Factor choice

When designing the niche factors, we obey the principle of clear, comprehensive, reasonable, feasible, and use the method of gradual subdivision to decompose

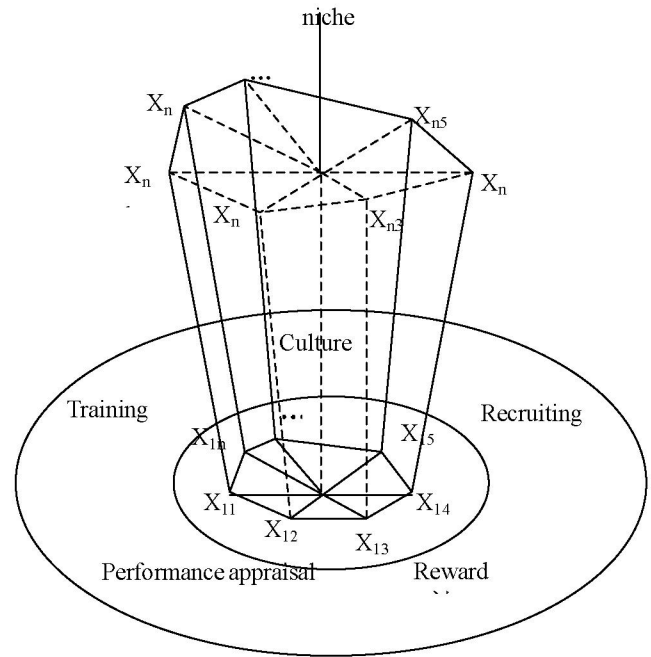


Fig.2 Human resource niche's levels

questions. In this article, we think the "competence" as the ideal of individual evaluation and niche is the carrier of evaluation. According to the definition of human resource niche, we will design the niche factors in the view of competence.

In this article, we mainly refer to the classification results of Cheetham & Chivers (1996) ^[15] and of Xu Qing-rui & Wang Yong(2004) ^[16]. We focus on meta-competencies which are divided into cognitive skills, self-knowledge, emotional resilience, personal drive, and personal character. Every factor can be divided into more indexes. Meta-competencies mainly describe the individual's effect and control over environment. Other scene factors, including personal history of performance, career development, community resources possession etc are selected by means of literature summarizing and questionnaire. In this article, we divide personal history of performance into history performance, work experience and knowledge accumulation; We measure personal status by government connections, business connections; and describe and measure the career flexibility by seven variables: the amount of organizations with which one has worked, post amount, promotion frequency, adjustment frequency (on the same level), the nature of work change, career stage and vocational training to describe and measure the career flexibility.

5.2 The selection of index

People at different ecological environment have different niche constituent. In order to find out a universal niche index system, we must seek to remove heterogeneous indexes from the preliminary system.

5.2.1 Selection idea

In this article, we select the personal performance as the reference variable, test the secondary index using statistical method, and gain the key individual niche factors which can interpret individual performance very well. Combining all individual niche data from different organization, we can gain the universal individual index system.

5.2.2 sample selection and questionnaire

Changsha, Zhuzhou, Hengyang, Loudi, in Hunan province are four cities we chose for survey.. Considering different levels of economic development in these cities, we respectively chose 1-3 representative enterprises different in nature, scale and field. They are either medium and large enterprises, or private and stable ones. In the eight enterprises surveyed, the human resource management departments are responsible for

identifying the key staff and interviewees according to the definition given by us. In the end, we take back 125 effective samples. Sample structure is as follows.

5.2.3 Data analysis

Sample analysis methods used are relevant analysis. In order to be short, we simplify the SPSS statistical outcome, and only provide the disqualified proportion in this article. The specific outcome is as Tab.1, 2.

5.2.4 Human resource niche index system

The results show that in the initial index system the correlation between the majority index of meta-competencies and personal performance are significant at 0.01 level, but the interpersonal intercourse indicator ,the developing other indicator, and the risk bearing can't pass the Pearson correlation test and must be deleted. Thus we gain the final individual niche index system as shown in the table below.

Tab.1 Cognitive skills correlation analysis

		Individual performance	Detail sensitivity	Objectivity	interpersonal intercourse	Listening other	Effecting other	developing other	Organization idea
Individual performance	Pearson Correlation	1							
	Sig. (2-tailed)	.							
	N	125							
Detail sensitivity	Pearson Correlation	.471**	1						
	Sig. (2-tailed)	.000	.						
	N	125	125						
Objectivity	Pearson Correlation	.527**	.572**	1					
	Sig. (2-tailed)	.014	.023	.					
	N	125	125	125					
interpersonal intercourse	Pearson Correlation	.386	.442**	.428**	1				
	Sig. (2-tailed)	.057	.017	.003	.				
	N	125	125	125	125				
Listening other	Pearson Correlation	.503**	.472**	.643**	.547**	1			
	Sig. (2-tailed)	.021	.002	.009	.000	.			
	N	125	125	125	125	125			
Effecting other	Pearson Correlation	.313	.614**	.594**	.569**	.540**	1		
	Sig. (2-tailed)	.062	.002	.024	.000	.000	.		
	N	125	125	125	125	125	125		
developing other	Pearson Correlation	.325**	.504**	.550**	.516**	.621**	.748**	1	
	Sig. (2-tailed)	.000	.034	.000	.032	.000	.000	.	
	N	125	125	125	125	125	125	125	
Organization idea	Pearson Correlation	.629**	.638**	.658**	.534**	.598**	.706**	.696**	1
	Sig. (2-tailed)	.000	.008	.027	.000	.013	.000	.000	.
	N	125	125	125	125	125	125	125	125

** Correlation is significant at the 0.01 level (2-tailed).

Tab.2 Personal drive correlation analysis

		Individual performance	Success oriented	risk bearing	respond	Self-motivation	Enthusiasm
Individual performance	Pearson Correlation	1					
	Sig. (2-tailed)	.					
	N	125					
Success oriented	Pearson Correlation	.661**	1				
	Sig. (2-tailed)	.000	.				
	N	125	125				
risk bearing	Pearson Correlation	.399	.445**	1			
	Sig. (2-tailed)	.054	.000	.			
	N	125	125	125			
respond	Pearson Correlation	.680**	.680**	.510**	1		
	Sig. (2-tailed)	.014	.000	.000	.		
	N	125	125	125	125		
Self-motivation	Pearson Correlation	.634**	.680**	.418**	.628**	1	
	Sig. (2-tailed)	.000	.012	.000	.000	.	
	N	125	125	125	125	125	
Enthusiasm	Pearson Correlation	.702**	.554**	.374**	.690**	.615**	1
	Sig. (2-tailed)	.004	.000	.031	.023	.000	.
	N	125	125	125	125	125	125

Tab.3 Human resource niche index system

First index	Second index	Third index
History savings	History performance	Individual performance
	Occupational flexibility	serving organization amount
		post amount
		promotion frequency
		adjustment frequency
		the nature of work change
		career stage
		vocational training
	business connections	government connections
		business connections
meta-competencies	Cognitive skills	Objectivity
		Detail sensitivity
		Listening other
		Effecting other
		Organization idea
	Self- cognizing	Self feelings cognizing
		Self needs cognizing
		Cognizing competence level
	Emotional resilience	Self-control
		Otherness bearing
		Press bearing
		Empathizing competence
		willpower
	Personal drive	Success oriented
		respond
		Self-motivation
		Enthusiasm
	Personal character	responsibility
		Honesty
		Self-confidence
		Agility
	Knowledge and skill	Work experience
		Specialty knowledge

On the basis of our index system, Human resource niche can be given a corresponding weighing by AHP, and its value can be calculated by Levins' Simpson method or the common quantitative method in management—fuzzy comprehensive judgement, which is an important subject in our following studies and we are not going to illustrate in this article.

6 Conclusion

In this article, we are the first to introduce the idea of niche into human resource management. Integrating the methods of management and ecology we design the comprehensive human resource niche index system based on defining the two categories of human resource niche. But the specific designing of niche index still have huge space for development. In the calculation of human resource niche, subsequent scholars can discuss the formula from the perspective of practical convenience. In the prospects of application, we believe that by using niche as the carrier for competence people can study the people-job match, and can effectively interpret too frequent personnel flows, invalid staff motivating and other issues in human resource management.

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