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Research Article

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The risk formation theory of knowledge-based talents flow in China

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ABSTRACT

Knowledge-based talents with advanced knowledge, experience and skills are major creators of enterprise value.A study on the various reasons causing the flow risks of knowledge-based talents is of great theoretical and practical significance. The article begins with a review of research literature, and then analysis on formation factors of knowledge-based talents' flow risk, through empirical study found that personal factors, organizational factors, team factors and environmental factors, includingjob interest,work ability, recognition of the work, working conditions, compensation and benefits, promotion prospects, relationshipwith superiors and colleagues, individual effort, economic and social environmentare the critical factors of knowledge-based talentsflowrisk in China.

Keywords: Knowledge-based talents, Flow risk, Empirical analysis, China.

INTRODUCTION

Peter F. Drucker pointed out in his book *Management Challenges for the 21st Century*: A growing number of enterprise manager already are intellectuals, they are intellectual workers, and they are no longer the boss's subordinates, but partner [1]. Knowledge-based talents with advanced knowledge, they control the level of wealth creation.Because of the value and competitiveness of the enterprises are created by knowledge-based talents, their flow is bound to affect the enterprises' development.In recent years, the flow of knowledge-based talents becomes more and more popular in China.Reasons for their flow are complex, both objective environmental impacts, there are changes of subjective thought, for example, industrial structure adjustment, economic globalizations, market economy matures, subversion of traditional values are likely to become the reasons of knowledge-based talents leaving the enterprises. At the same time, knowledge-based talents with a strong sense of autonomy, compared to ordinary people, they aspire to enterprise environments with flexible and loose corporate culture. They do not wish to be subjected to any restrictions; this character also determines their flow is easier than most people.For enterprises, knowledge-based talents flow will cause many explicit or implicit losses,such as increased personnel costs, lower morale, and leakage of trade secrets,etc. [2].Research on risk formation mechanism of knowledge-based talents, establish reasonable management strategies of flow risk, to the maintenance of human resource system function, as well as improving operational efficiency is of great significance.

CONNOTATION

Knowledge-based talents, also commonly referred to as knowledge workers.Peter F. Drucker in his book *The Landmarks of Tomorrow* introduced in "knowledge worker" [3]. He describes the knowledge worker as: access and make use of symbols and concepts, using of knowledge or information to work.Since then, scholars have further research on knowledge-based talents. Zhang believes that knowledge-based talents with high personal qualities, strong independent, innovative, high liquidity, high achievement motivation and work complexity, because of these complex properties, enterprises must pay more attention to the management of knowledge-based

talents [4]. Western economists earlier focus on knowledge-based talents' flow problems, major research includes the unemployment rate, wages, and so on, psychologists and management after joining the ranks of research on knowledge-based talents, focusing on individual and organizational factors.Jean-Mari and Hiltrop pointed out that factors of affecting the knowledge-based talents'flow including remuneration for work, challenges, training and promotion opportunities, socio-economic status, autonomy, job responsibilities, job security and career development opportunities[5].According to Kong's research, intrinsic motivation, including work, personal growth, need for achievement, as well as extrinsic motivators, including salaries, highly independent, external recognition, are major factors causing the flow of knowledge-based talents[6].In summary, the conduct and character of knowledge-based talents with high complexity and uncertainty, they easily changes with time, and generate new characteristics.Therefore, the study of knowledge-based talents also has certain timeliness, requires timely attention and study.

THEORETICAL ANALYSIS

According to the existing literature, find scholars mainly from personal factors, organizational and environmental factors in an analysis of knowledge-based talents flow.Among them, the analysis of personal factors, organizational and environmental factors can learn from job satisfaction research tools (as shown in table 1), by measuring various aspects of the work, reveals the risk formation mechanism of knowledge-based talents flow.

Table 1: Job Satisfaction Survey Tools

Tool Name	Scholar Name	Main Content
Index of Job Satisfaction, IJS[7]	Brayfield&Rothe	Questionnaire for a total of 18 questions to measure pay, promotion, management, and corporate groups and other variables of satisfaction.
Need Satisfaction Questionnaire, NSQ[8]	Porter	Questionnaireapplies to managers, each question has two items, including the "ideal" and "reality" score, representative of the difference between the satisfactions, higher the score, it means less satisfactory.
Minnesota Satisfaction Questionnaire, MSQ[9]	Weiss, Dawis, England &Lofquist	Short form questionnaire consists of 20 topics, can measure the inner satisfaction, external satisfaction and general satisfaction.Long form questionnaire consists of 120 topics, can measure 20 variables of work satisfaction and general satisfaction.
Job Descriptive Index, JDI[10]	Smith, Kendall &Hullin	Questionnaire can measure five variables of satisfaction, including the work itself, pay, promotion, superiors and colleagues. The total score of five variables represents the overall work satisfaction.
Job Diagnostic Survey, JDS[11]	Hackman & Oldham	Questionnaire for measuring general satisfaction, intrinsic motivation and special satisfaction (Job security, supervision, salary, social relations and growth variables).Its purpose is to investigate whether the current workflow needs to be redesigned in order to improve the performance of enterprises.

Analysis of these research tools, the author considers questions quantity of rationality, questions of readability and participants'thinking habits is essential for the credibility and validity of the research results.Therefore, the author draws on ideas of JDI and JDS,and combined knowledge-based talents' personality and needs,measurement of job satisfaction extended to 11 variables, including job interest, work ability, recognition of the work, working conditions, compensation and benefits, promotion prospects, relationshipwith superiors and colleagues, individual effort, economic and social environment. The 11 variablesset tosecondary variables, on this basis, abstracting the three dimensions, includingpersonal factors, organizational factors, team factors and environmental factors. In terms of flow risk, author's analysis from three variables, including the flow opportunity, flow costs and flow tendency,measuring knowledge talented person available social resources, their feelings about the labor market and employment information, as well as economic costs and psychological costs caused by flow.

EMPIRICALANALYSIS

Empirical object of this research is the knowledge-based talents in China. This research has special requirements for the qualifications of the participants, the nature of the work and wages,therefore, the first degree of participantsare upon college, they have work experience and steady income. The questionnaire using the7 point scale, and altogether provides questionnaire 800,the actual recovery of 602 copies, of which 550 valid questionnaires, for an effective questionnaire returns-ratio is 68.75%.

First of all,this research discussesreliabilityof the questionnaire, check internal consistency of the questionnaire; the results are shown in the following table 2.

Table 2: Reliability Analysis

Dimensions	Variables	Cronbach's Alpha
Personal factors	Job interest	0.742
	Work ability	0.817
Organizational factors	Recognition of the work	0.832
	Working conditions	0.846
	Compensation and benefits	0.910
	Promotion prospects	0.849
Team factors	Relationship with superiors	0.894
	Relationship with colleagues	0.823
Environmental factors	Individual effort	0.839
	Economic environment	0.863
	Social environment	0.852
Flow risk	Flow opportunity	0.755
	Flow costs	0.840
	Flow tendency	0.931

From table 2 we can see that the reliability coefficient for each variable is higher than 0.5, it means that reliability in this research is credible.

Second, this research discussesvalidityof the questionnaire, and using factor analysis for measuring validity, the results are shown in the following table 3.

Table 3: KMOand Bartlett's Test of Sphericity

Dimensions	Variables	Kaiser-Meyer-Olkin Measure Of Sampling Adequacy	Bartlett's Test Of Sphericity		
			Approx Chi-Square	df	Sig.
Personal factors	Job interest	0.736	670.226	6	0.000
	Work ability	0.741	845.409	6	0.000
Organizational factors	Recognition of the work	0.722	639.868	3	0.000
	Working conditions	0.810	909.873	6	0.000
	Compensation and benefits	0.876	2022.155	10	0.000
	Promotion prospects	0.802	323.687	10	0.000
Team factors	Relationship with superiors	0.833	1259.397	6	0.000
	Relationship with colleagues	0.674	680.355	3	0.000
Environmental factors	Individual effort	0.709	1044.167	6	0.000
	Economic environment	0.819	1012.423	6	0.000
	Social environment	0.790	988.718	6	0.000
Flow risk	Flow opportunity	0.674	430.985	3	0.000
	Flow costs	0.804	868.717	6	0.000
	Flow tendency	0.880	2245.837	10	0.000

From table 3 we can see thatKMO of all variables are greater than 0.600, indicates that the analysis results can be accepted, and Sig<0.01, shows that thereare significant correlations between variables. Therefore, these variables can be used for principal components analysis.The results of components analysis are shown in the following table 4.

Table 4: Components Analysis

Dimensions	Variables	Eigenvalue	Total Variance Explained	Component				
Personal factors	Job interest	2.423	60.566	0.829	0.795	0.850	0.617	
	Work ability	2.590	64.738	0.848	0.837	0.687	0.835	
Organizational factors	Recognition of the work	2.254	75.140	0.852	0.868	0.881		
	Working conditions	2.755	68.874	0.808	0.826	0.851	0.834	
	Compensation and benefits	3.737	74.738	0.907	0.890	0.900	0.878	0.736
	Promotion prospects	3.158	63.154	0.904	0.890	0.700	0.658	0.791
Team factors	Relationship with superiors	3.037	75.927	0.885	0.868	0.836	0.895	
	Relationship with colleagues	2.235	74.515	0.912	0.870	0.805		
Environmental factors	Individual effort	2.701	67.520	0.789	0.813	0.843	0.840	
	Economic environment	2.839	70.980	0.812	0.832	0.859	0.865	
	Social environment	2.786	69.658	0.861	0.856	0.806	0.814	
Flow risk	Flow opportunity	2.036	67.871	0.864	0.829	0.776		
	Flow costs	2.707	67.680	0.833	0.861	0.775	0.820	
	Flow tendency	3.935	78.699	0.855	0.914	0.891	0.892	0.883

From table 4 we can see thatall variable factor loads are higher than 0.500, and total variance explained over 60%, shows that division of these dimensions is reasonable.

Finally, this research discusses Correlation of the dimensions;thepurpose is to reveals the level of correlation

between the dimensions, and the results are shown in the following table 5.

Table 5: Correlation Analysis

Dimensions	Parameter	Personal factors	Organizational factors	Team factors	Environmental factors
Flow risk	Pearson Correlation Coefficient	-0.753**	-0.795**	-0.712**	-0.647**
	Sig. (Two-sided)	0	0	0	0
	N	550	550	550	550

***. Statistical significance at the 0.01 level (two-sided test)*

From table 4 we can see thatthe correlation coefficientsbetween personal factors, organizational factors, team factors, environmental factorsand flow riskare significant at the 0.01 significance level (two-sided tests),and showthe negative correlation. Theresult illustrates that if knowledge-based talents are more satisfied withpersonal factors, organizational factors, team factors and environmental factors, then their flow risk will be lower;conversely, the flow risk will be higher.

CONCLUSION

This research found thatthere aresignificantnegative correlations betweenflow risk and personal factors, organizational factors, team factors, environmental factors. Therefore, improvements of these factors can significantly reduce the flow risk of knowledge-based talents.More specifically, in terms of personal factors,enterprises must focus on knowledge-based talents of interest, arranged for them to meet their interest in jobs;Giving full play to their ability to work, helping them match the capacity to formulate and challenging work; Improving the recognition of their work, so that they can feel the importance of the work and a sense of achievement.In terms of organizational factors,enterprises mustcreate a good working environment for knowledge-based talents, and protect the quality of their work and life;Attaching to their pay and benefits, and provide fair and reasonable salary to them;Giving them enough opportunities for advancement, and help them to determine their career plan.In terms of teamfactors,enterprises musthelp them to build good relationships in enterprises, and ensure that they enjoy a harmonious working atmosphere;Promoting collaborative spirit, helping them to integrate into the development of enterprises.In terms of environmental factors,enterprises mustfocus on their feelings about economic and social environment, including tax rates, price levels and health care, and so on.Helping them to improve their ability to adapt to the environment, and enhances their capacity to respond to external shocks.In conclusion, if enterprises want to reduce the flow risk of knowledge-based talents,by reducing their flow opportunity, increasing their flow costs and weakening their flow tendency,and then enterprises can control their flow risk in a reasonable level.

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