

Research on Human Resource Management of Ceramic Industry under the New Normal Economy

Taking Faku Ceramics Development Zone as an example*

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Abstract—With the advance of the new normal development of Chinese economy, human resource of the ceramic industry has become an important aspect of optimization adjustment. This article takes Faku county ceramic development zone as an example, analyzes four aspects status quo of six human resources, overall structure, knowledge skill level, quality structure and age structure. Then the article points out three major problems existing in human resources management of the development zone. Through in-depth discussion, a solving strategy is given from two aspects, external environment creating and internal planning of human resources.

Keywords—new normal-economic; ceramic development zone; human resources

I. INTRODUCTION

In recent years, the economy of our country enters the period of new normal development. One of the core characteristics is the new normal of economic structure from structural imbalance to optimization to balance. We can understand it as the optimization and adjustment of production, sales, human resource and organization structure in industry. As a traditional labor intensive industry, the ceramic industry has the structure configuration of human resources with low academic qualification and low quality. With the increasing proportion of knowledge economy in enterprise output, the structure configuration is in urgent need of optimization and balance.

A ceramic industrial city that locates in Shenyang and radiates across the country is established in Faku County, depending on rich mineral resources, advantaged geographical location and strong support of local government. However, the slow educational development in local areas and large gaps between qualities of people influence the development of ceramic industry.

II. INVESTIGATION AND ANALYSIS ON GENERAL STATUS QUO OF HUMAN RESOURCES IN FAKU COUNTY CERAMIC DEVELOPMENT ZONE

A. Analysis on Six Types of Human Resource Structure

For the convenience of analysis, we divide all personnel in the ceramic development zone into six types including middle and senior manager, the technology research and development personnel, production personnel, sales personnel, administrative personnel and other. According to the key investigation and statistics, the personnel distribution in ceramic enterprises of the development zone is as follows: "Table I"

TABLE I. PERSONNEL DISTRIBUTION IN CERAMIC ENTERPRISES

Job nature	Middle and senior manager	Technology research and development personnel	Production personnel	Sales personnel	Administrative personnel	Other	Total
Number of people	134	63	2005	36	80	27	2345
Proportion	0.057	0.027	0.855	0.015	0.034	0.012	

According to "Table I", managers and administrative personnel account for 8.4 percent of the total number of people. The proportion is reasonable because it conforms to the industrial characteristics of enterprises in the development zone. Although enterprise internal management is distinctly important, for enterprises of production and processing, technology research and development personnel and production workers are foundation. At present, the research and development ability of ceramic industry in Faku is too low. Professional and technical personnel should be introduced to strengthen the enterprise development.

B. Analysis on Knowledge Skill Level of Human Resources

The knowledge skill level of staff in ceramic enterprises of the development zone can be analyzed through the average degree of education.

$$\text{Average degree of education } Acp = \sum E_i \times n_i / N$$

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E_i is the education years of the i education background, n_i is the number of people with i education background and N is the total number of people.

According to the educational system of our country, the education years include primary school $E_1=6$, junior high school $E_2=9$, senior high school $E_3=12$, technical secondary school $E_4=13$, junior college $E_5=15$, undergraduate $E_6=16$, master $E_7=19$ and doctor $E_8=22$. According to the situation of staff in the development zone, we set the E_i value of other personnel with education background of below technical secondary school as 11, namely the level of senior two.

According to the key investigation and statistics, the education backgrounds of staff in ceramic enterprises of the development zone are as follows: "Table II"

TABLE II. EDUCATION BACKGROUNDS OF STAFF IN CERAMIC ENTERPRISES

Education background	Doctor	Master	Undergraduate	Junior college	Other
Number of people	1	2	18	72	2252
Proportion	0.00043	0.00087	0.0077	0.031	0.960
Weight	22	19	16	15	11
Weight number	11.17				

Although attentions are paid to the recruitment of high quality talents and the training and development of them in the development zone in recent years, because the personnel with degree of education below junior college account for a high proportion, the average degree of education in the development zone is still below junior college ($A_{cp}=11.17$), or the level of senior two. The overall knowledge skill level is low.

C. Analysis on Quality Structure of Human Resources

A reasonable talent structure must have top talents and medium and junior talents. Talents at different levels play different roles in the talent group and cannot replace each other. However, junior talents can transform into the senior. Different industries have different requirements for the proportion of talents. Researches show that the education years and the quality of human resources have obvious positive correlation, so we analyze the quality structure of human resources according to the education background of personnel.

According to the key investigation and statistics, the quality structure of human resources in ceramic enterprises of the development zone is as follows: "Table III"

TABLE III. EDUCATIONAL BACKGROUND STRUCTURE OF STAFF IN CERAMIC ENTERPRISES OF THE DEVELOPMENT ZONE

Education background	Doctor	Master	Undergraduate	Junior college	Other	Total
Number of people	1	2	7	27	2308	2345
Proportion (%)	0.04	0.08	0.29	1.15	98.42	100

According to "Table III", the overall quality of human resources in the ceramic industry of the development zone is not high. Specifically speaking, the number of highly educated talents is too small. The proportion of doctor and master is nearly zero, people with bachelor degree is only 0.29 percent. It is far below the average level of the industry.

If we attribute people with bachelor degree or above to top talents, the proportion of senior, medium and junior talents in the development zone is 1 to 3.4 to 107. The reference data show this proportion is 1 to 3 to 5 in developed countries. According to the researches of experts, the proper proportion of it in domestic professional talent group is 1 to 3 to 9. It shows the human resource structure in the development zone is seriously unreasonable even very poor.

D. Analysis on Age Structure

People at different ages play different role in human resource group. According to the key investigation and statistics, the age structure of human resources in ceramic enterprises of the development zone can be analyzed through "Table IV".

TABLE IV. AGE STRUCTURE OF STAFF IN CERAMIC ENTERPRISES OF THE DEVELOPMENT ZONE

Age	Under 25 years old	25 to 35 years old	35 to 45 years old	45 to 55 years old	Above 55 years old	Total
Number of people	495	727	622	413	88	2345
Proportion (%)	21.10	31.00	26.52	17.61	3.75	100

People under 25 years old (average age of human resources) have strong receptivity of newly sprouted things and creative spirit as well as enthusiasm. People between 25 and 35 years old are energetic and creative and think quickly. People between 35 and 45 years old reach the peak in breadth and depth of thought, understanding, judgment and experience. According to table 1.4, the proportion of people in the three age groups is 78.62 percent. The proportion of people between 25 and 35 with strong learning ability and service ability is 31 percent. It shows the age structure of the development zone is very good and has very high development potential.

III. MAIN PROBLEMS IN HUMAN RESOURCES OF CERAMIC ENTERPRISES IN THE CERAMIC DEVELOPMENT ZONE OF FAKU COUNTY

A. Overall Knowledge Skill Level Is Low

At present, the index of average degree of education in the ceramic development of Faku County is 11.17, equivalent to the level of senior two. It fails to conform to the economic status of the development zone. First, Faku County is close to the capital of Liaoning Province and the marginal area of economic, political and cultural center of Liaoning and shows high average cultural level. Second, as one of the famous science and education cities, Shenyang has good culture base. Located in this city, the development zone enjoys exceptional

advantages, having the ability and necessity to improve the present index of average degree of education.

B. The Number of Managers and Technical Personnel Is Small and Out of Proportion

According to the survey results, the managers and the technology research and development personnel in the development zone account for 5.7 percent and 2.7 percent of the total number of staff respectively. The number of technology research and development personnel only accounts for about 50 percent of that of the managers, which is out of proportion. It indicates the enterprises have insufficient total number of staff, unreasonable structure and small number of managers and serious scarcity of technology research and development personnel and require improvement.

C. Shortage of Ability in Technology Research and Development

Specifically, the employees in the development zone have low education background. The distribution of education background of technology research and development personnel in the development zone indicates people with bachelor degree or above only account for 0.41 percent, failing to meet the requirement of this post. Moreover, the technology research and development personnel in the development zone only account for 4.5 percent, which is far below the social average level and doesn't conform to the position of it as the national development zone. In large and medium-sized cities with developed economy, the proportion of technology research and development personnel has reached 10 to 20 percent. In the knowledge economy society, the industrial competition is increasingly fierce. Enterprise must continuously innovate to seek survival and development. The competition between enterprises is the competition between talents who grasp the core technology.

IV. MEASURES TO IMPROVE THE HUMAN RESOURCES IN CERAMIC ENTERPRISES IN THE CERAMIC DEVELOPMENT ZONE OF FAKU COUNTY

A. Create Good External Environment of Human Resources

1) Normalize official business environment and create good industry environment

The creation of a good investment environment is of vital importance for rapid industry agglomeration. Investment environment includes hardware environment and software environment. Hardware environment includes land, professional production materials, logistics, traffic and raw materials. Software environment includes revenue, financing policy and the service level of government. In the investment promotion, the government of Faku County can only give limited hardware environment. The software environment can give investors confidence. Therefore, the creation of a civil servant group with high quality, high management level and high work efficiency is the priority among priorities to create software environment.

2) Strengthen marketization construction and informatization construction of human resources

The ceramic development zone in Faku strengthens the publicity of talent introduction and creates the social environment for excellent talents to stand out. The marketization construction and informatization construction of human resources are strengthened. Media such as newspapers, television and the internet are used to publicize new policies and measures of the development zone about attracting, training and encouraging talents. Furthermore, it establishes the good prevailing custom with respect for labor, knowledge, talents and creation and creates good industrial environment for people to become useful persons competitively and give full play to their talent. Professional and technical personnel are encouraged to settle down in Faku, in order to make the Faku ceramic development zone become the well-loved place of talent accumulation and the successful entrepreneurship of far-sighted personage.

B. Establish Sound Internal Planning Strategy of Human Resources

1) Strengthen the cultivation and training of talents in enterprises of the development zone

a) Establish and improve the training management system: Hardware and software facilities including training management organization, training center, training administrators, training teachers and the direction, coordination, control and evaluation procedures of the whole management chain will be established within two to three years. Meanwhile, the training information system is established to bring in information of training object, training requirements, training supply, policies and regulations as well as administrative provisions. It should be dynamic to ensure the information is comprehensive, accurate and newest.

b) Optimize the existing educational and training resources and establish vocational education center: Depend on the ceramic vocational school and integrate the existing vocational educational resources in Faku to form the ability of training more than two thousand people. The major setup focuses on electromechanics, furnace and ceramics that are insufficient in Faku ceramic industry. Other majors like ceramic art and design and automatic control will be improved gradually.

2) Intensify talent introduction

a) Improve policy system of talent resources and optimize the environment for talent development:

- Establish the scientific system for talent introduction. Formulate catalogues of occupation and major required by the industrial development, refer to the internationally-used talent introduction system and formulate scientific evaluation index system. Meanwhile, manage the talents introduced at all levels and adopt different matched service policies, in order to improve the human resource structure of the ceramic industry.
- Implement and improve the existing measures matched with the talent introduction. Solve problems of talents

introduced in cross-regional transfer of collective registered residence and social insurance like endowment insurance, settlement of family members and loan for purchasing house as well as promote the construction of relocation housing for talents.

b) Strengthen the interaction between universities, scientific research institutions and human resources in enterprises: Organize the recruitment of high-ranking and medium-ranking talents as well as urgently-needed talents. Two systems are established to introduce high-end talents, including the system of recruiting graduates of majors in short supply in universities and the system of closely cooperating with scientific research institutions.

Encourage enterprises and universities to cooperate and train applied talents.

Explore the customized training pattern with coalition of college and enterprise to train applied talents in professional fields such as engineering, management and finance and econ

Promote the flow of people in colleges and scientific research institutions in enterprises through various ways.

Promote the reform of education and scientific research system, accelerate the response speed of education to the market and establish more channels for the human resource flow between education and scientific research system and enterprises. Establish sound individual property right system of scientific and technological achievements and promote the undertake transfer of personnel to drive the transformation of scientific and technological achievements. High quality talents with market insight are guided and encouraged to flow in enterprises through various ways.

V. CONCLUSION

With the development of management concepts deepening, more and more enterprises begin to realize that human resources elements become the main factors affecting the development and competition of modern enterprises. It needs to improve the quality of human resources from two respects: external environment and internal planning, and then to promote the overall competitive strength of ceramic development zone in Faku county, because the overall human resources quality of this zone is lower.

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