Research on Forecasting Model of Human Resource Capability Requirement for Business Segments

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Abstract. With the reform of power system and state-owned enterprise reform gradually accelerated, power supply, industry, finance and other sectors of company are facing varying degrees of competition. Among them, the current financial and industrial units of the current human resources capacity demand forecast model can not effectively support the company's development strategy development requirements. How to optimize the allocation of human resource quality ability in the prerequisite of taking into account the characteristics of finance and industry plate has become a difficult problem in human resource demand forecasting. Thus, the article uses qualitative and quantitative methods to carry out human resource quality ability forecast, and provide reference for the company to scientifically develop human resources strategic planning.

Introduction

With the advent of the era of knowledge economy and the acceleration of the reform of the power system, the competition between power enterprises has evolved into the competition of talented people. Human resource management has been challenged by some new situation. Human capital has become the key driver of the enterprise performance.

Human resource demand forecasting is the basic work of enterprise human resource management. The forecast of human resource demand is based on the development strategy and goal of the company, taking into account the influence of various factors of the industrial and financial unit, which is the theory and method of estimating the future demand of the human resource capability. Its accuracy has a decisive effect on the success of human resource planning.

The demand forecast model of industrial financial units of power supply enterprises is complicated, the calculation is difficult and the practicability is not strong, and it is difficult to actually use it to calculate the capacity of industrial and financial units.

In addition, the company in the labor policy changes large in recent years, measurement of total amount of quality based on the company's historical data does not exist a stable basis for the application. Therefore, it is urgent to optimize the demand forecast model of industry and financial units.

Principles and Methods Introduction

This article mainly solved the problem of how many people who have a certain quality capacity industrial and financial units in power supply industry need. On the basis of the prediction of professional structure, the expert evaluation method is used to obtain the relevant data through the demand questionnaire, which forecasts the demand of a power supply industry for a certain quality capacity in the next year.

Research shows that employee quality is positively related to firm performance. The skills, knowledge, technology investment are higher in a firm, its performance level is often higher. The
quality of staff will directly determine the level of profits, especially when the labor costs rise. Objectively speaking, the improvement of the quality of staff is conducive to the increase in corporate performance.

Based on the principle of objectivity, this paper will take into account the market demand for the forecast of human resource quality demand of industrial financial units on the basis of total control, and make the improvement of human resource quality affect the performance increment of industrial units as the theoretical basis. Through the construction of a number of models, thus forming academic qualifications, titles and other needs of the unit of in next year.

**Overview**

Firstly, collect the forecast data. Select the company's representative financial and industrial units from 2010 to 2016 in the academic level, skill level, academic level, length of service to collect data. Thus complete the forecast data after removing unreasonable data.

Secondly, select the appropriate indicators to build and form a comprehensive quality index, used to represent the overall quality level of an industry financial unit in a year.

Thirdly, predict its quality increment with the industry financial unit performance increment, and calculate the incremental quality under the premise of reasonable measure performance increment.

Finally, calculate the overall quality of the stock level according to the incremental quality of the industry financial units in the next year, and break down into the index system. And ultimately get the level of job demand forecast of the next year including the industrial financial units of the academic level, skill level, education level and length of service.

**Constructing the Forecast Model of Human Resource Quality Capability Requirement of Industrial and Financial Units**

**Data Collection**

Take an industry and financial unit as an example, calculate the quality of its 2016 annual order. Select the level of academic qualifications, title level, technical skill level, service age as of the formation of predictors, respectively, select the proportion of graduates of industry and financial professionals, Master's degree or above the proportion of the number of employees, intermediate or above the proportion of technical titles, 5 years experience or above the proportion of in the same industry experience. This article made full use of annual reports and other public information or business data, extensively collected of objective data.

<table>
<thead>
<tr>
<th>Year</th>
<th>Proportion of graduates of industry and financial professionals</th>
<th>Master's degree or above the proportion of the number of employees</th>
<th>Intermediate or above the proportion of technical titles</th>
<th>5 years experience or above the proportion of in the same industry experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>0.2688</td>
<td>0.2312</td>
<td>0.2794</td>
<td>0.37</td>
</tr>
<tr>
<td>2012</td>
<td>0.2715</td>
<td>0.1989</td>
<td>0.2195</td>
<td>0.49</td>
</tr>
<tr>
<td>2013</td>
<td>0.2691</td>
<td>0.1569</td>
<td>0.198</td>
<td>0.58</td>
</tr>
<tr>
<td>2014</td>
<td>0.2793</td>
<td>0.1392</td>
<td>0.1757</td>
<td>0.59</td>
</tr>
<tr>
<td>2015</td>
<td>0.2833</td>
<td>0.138</td>
<td>0.1808</td>
<td>0.61</td>
</tr>
</tbody>
</table>

**Calculate the Comprehensive Quality Index**

Calculate KMO. The KMO statistic is used to compare the simple correlation coefficient and the partial correlation coefficient between variables. The closer the KMO is to 1, the more suitable the variables are the factor analysis. As shown in the figure, KMO is 0.714> 0.5, indicating that the existing variables are acceptable, is suitable for factor analysis.
**Calculate the overall interpretation of variance.** The overall interpretation of variance represents the factor contribution of the factor contribution. The closer the TVE is to 1, the more suitable the variables are the factor analysis. The results show that the financial unit TVE of the industry is 93.029%, showing that the selected variable can have sufficient explanatory power.

**Calculate the factor load matrix.** From the regression results, we can see that in the single factor model, the four load coefficients are high, indicating that the extracted factor has a higher degree of influence on the original four variables.

**Calculate factor scores.** The results using the SPSS software, show that the 2015 factor score is 0.06944. 

That is to say, 

\[ F_1 = \sum_{i=1}^{4} \alpha_i X_i \]

\[ = 1.34954 \times (-0.241) + 1.45667 \times 0.266 + 1.38924 \times 0.265 + 1.36721 \times (-0.264) = 0.06944 \quad (1) \]

**Calculate the Overall Quality Index for the Forecast Year**

Based on the above data, the following models were established to establish the regression model of the comprehensive quality index and performance increment of financial units.

\[ Y_c(2016) - Y_c(2015) = \beta_{2015} (Z_c(2016) - Z_c(2015)) \quad (2) \]
\[ Y_c(2015) - Y_c(2014) = \beta_{2014} (Z_c(2015) - Z_c(2014)) \quad (3) \]
\[ Y_c(2014) - Y_c(2013) = \beta_{2013} (Z_c(2014) - Z_c(2013)) \quad (4) \]
\[ Y_c(2013) - Y_c(2012) = \beta_{2012} (Z_c(2013) - Z_c(2012)) \quad (5) \]

The profit increment is chosen as the independent variable, and the function of the financial unit’s incremental effect on the comprehensive quality index is calculated. The value is 1/224268.

Which can be determined the industry financial unit comprehensive quality index in 2016 this year.

\[ Y_c(2016) = \beta_{2015} (Z_c(2016) - Z_c(2015)) + Y_c(2015) = (51022 - 45021) / 224268 + 0.06944 = 0.0962 \quad (6) \]

The proportion of graduates in 2016 can be expressed as follows:

\[ X_{1(2016)} = Y_{1(2016)} / (\alpha_1(2016) + \alpha_2(2016) \frac{\alpha_1'}{\alpha_1} + \alpha_3(2016) \frac{\alpha_2'}{\alpha_1} + \alpha_4(2016) \frac{\alpha_3'}{\alpha_1}) \]

\[ = (-0.241 + 0.266 \times 0.977 / 0.948 + 0.265 \times 0.926 / 0.948 - 0.264 \times 0.987 / 0.948) \times (1/0.0962) \]

\[ = 0.1781 \quad (7) \]

Calculated the next year the industry financial institutions required industrial finance graduates accounted for 17.81%. And so on, which calculated the financial industry unit master’s degree or above the proportion of the number of employees, intermediate and above the proportion of technical titles, with more than 5 years experience in the proportion of industry experience for the unit. The above results can provide a reference for the financial unit.

**Conclusion**

This project is based on the human resource needs of industrial and financial units, which supported the strategic objectives of the company as a guide, scientifically and rationally constructed a demand forecast model of the corporate finance and industry units, which is effective in adapting the classification reform of state-owned enterprises and power system reform. This article constructed the comprehensive quality index of human resources in the financial and industrial units, established the relationship between the increment of the comprehensive quality of
human resources and the corresponding unit performance increment, completed and decomposed the comprehensive ability of human resources. The paper achieved the company's industrial financial unit classification forecast reasonably through the above three steps, which laid the foundation for business classification management.

References


