

Analysis of Employer Value Proposition Competitiveness in Online Recruitment

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Abstract: With the growth of demand from Chinese companies and Internet development, online recruitment has become an important recruitment channel. The employer value proposition (EVP) will directly affect job seekers' job-hunting intentions in online recruitment. However, there is little research on EVP competitiveness in existing online recruitment research. Firstly, this paper selects specific EVP competitiveness evaluation elements. Then the analytic hierarchy process is combined to build the hierarchical model. Finally, crawl the EVP recruitment information reflected in the LiePin website, and analyze the EVP competitiveness. The research shows that this paper's hierarchical model has a particular utility and can be used to analyze EVP competitiveness in online recruitment.

1. Introduction

Since ancient times, as long as there is a commercial atmosphere, there will be talent competition. As an essential production factor of an enterprise, the proposition of effectively attracting talents to the enterprise has always attracted enterprises and the whole society. Especially in recent years, China's demographic structure has changed. The working-age population's absolute number has declined, and the competition for talents among companies has intensified. How companies can recruit talents in demand from the limited labour supply has become particularly important. In today's rapid Internet development era, online recruitment has become a necessary channel for corporate recruitment. Even with the rapid growth of online recruitment, companies are still worried about absorbing talents when using online recruitment. Whether in coastal areas or the central and western regions, some companies have a shortage of technical personnel. In recent years, as China vigorously promotes mass entrepreneurship and innovation policies, many small and micro enterprises have emerged in China, and the demand for talent has further increased.

In this background, companies should review the current situation. Companies should pay attention to the company's employee recruitment and pay attention to the competitiveness of the employer's value proposition in the industry. The more competitive a company's employer's value proposition is, the more attractive the company will be to job seekers. Nowadays, the role of Internet applications in strengthening corporate management has become increasingly prominent, especially in the recruitment process in human resource management. In online recruitment, the employer's value proposition's competitiveness is often reflected in the treatment offered to job seekers. From an employers' perspective, analyzing online recruitment information can derive

employers' value propositions' competitiveness. Therefore, it is of practical significance to study the competitiveness of the company's online recruitment employer value proposition in keeping with the time. It is helpful for companies to reflect on whether their recruitment work is perfect, and it is useful for companies to think about whether they can adapt to the trend of the times and adopt various methods.

2. Literature Review

The concept of Employer Value Proposition (EVP) is borrowed from the field of marketing management, and it clearly describes the various elements that companies have to attract applicants [1]. From the perspective of employers, EVP explores the best model for companies to motivate employees. At the same time, companies hope to attract and retain talents in this interactive way, and ultimately achieve the organization and employees [2]. Studying the employer's value proposition helps to enhance the attractiveness of employers more effectively. From the research of the employer's attractiveness, the constituent elements of the employer's value proposition can be quickly found. The company's salary system and job characteristics affect the attractiveness of employers [3]. The five dimensions that affect hotel employers' attractiveness are development value, environmental atmosphere, hotel characteristics, work itself, and psychological value [4]. Job seekers mainly pay attention to two aspects when applying for a job: functional characteristics and symbolic characteristics [5]. Symbolic elements refer to some abstract and subjective attributes in the organization, such as whether employees believe that the employer's company is sincere and trustworthy, which can meet employees' needs to express themselves psychologically and maintain their image. The functional characteristics refer to some real, objective, and specific attributes that exist or do not exist in the organization, that is, some practical utility including salary, promotion opportunities, and job security that can satisfy employees or job applicants. For internal employees, functional factors include six sub-dimensions, including workplace safety, work benefits, flexible working hours, promotion opportunities, wages, and task requirements [6]. Functional elements can also be divided into ten dimensions: benefits, learning opportunities, salary, job interest, promotion, position, company reputation, training plan, corporate culture, and job safety [7]. Domestic scholars believe that functional factors have eight dimensions, including development opportunities, personal value realization, organizational strength, corporate atmosphere, remuneration, corporate benefits, social responsibility, and work arrangements [8]. It also divides functional factors into seven dimensions: organizational strength, leadership characteristics, job characteristics, enterprise development, wages, work systems, and partnerships [9]. The five aspects of interest value, social value, economic value, development value, and application value, constitute employer attractiveness [10]. With the development of the Internet, online recruitment has become an important recruitment channel for enterprises. Many scholars have also researched the factors that influence employer attractiveness in online recruitment. Corporate reputation regulates the impact of page content and page design aesthetics on employer attractiveness [11]. The credibility, interactivity, and fun of the recruitment WeChat content characteristics affect employer attractiveness [12].

Most of the existing online recruitment research is the analysis of recruitment skills. Such as mining e-commerce skills demand from two aspects of comprehensive quality and professional skills [13]. The characteristics of domestic data job recruitment requirements are analyzed from five aspects: ability requirements, academic qualifications, and professional requirements, professional knowledge, professional tools and skills, and work experience [14]. There is a lack of research on EVP competitiveness in online recruitment research. This paper selects specific EVP competitiveness evaluation elements based on the existing EVP research literature and constructs a

hierarchical model for each component. Count the recruitment information of EVP crawled from the recruitment website, and score each aspect. Finally, use the analytic hierarchy process to analyze EVP competitiveness.

3. Construction of the Competitive Level Model of Employer Value Proposition

3.1 Theoretical basis

Internal marketing theory believes that marketing methods are also suitable for attracting and retaining talents. This view contains a premise that the company is regarded as a huge market, its customers are the company's current employees and potential employees, and the product is work. The purpose is to attract and retain employees to work for them. Therefore, companies need to provide attractive and motivating work to encourage employees to work hard and complete their overall goals. Internal marketing is about successfully recruiting, training, and motivating outstanding employees to serve customers. Specifically, it uses human resource management methods to harvest internal employees who can satisfy the company, has customer awareness, and then make external customers satisfied through these employees. At the same time, it can continue to gain a competitive advantage. In short, internal marketing from the perspective of human resource management is the process of attracting outstanding talents, making enterprises the preferred employer of job seekers in the labour market.

The signal transmission theory believes that in the case of information asymmetry, the information owner will release the signal of interest to the target group as much as possible. The recipient of the information will take action to avoid the disadvantages caused by this information asymmetry. Then, it achieves the purpose of avoiding risks. Before entering the company to work, job seekers will collect as much information as possible about the employer to help them make reasonable job-hunting decisions, such as company address, advertising. It is difficult for job-seekers to obtain information about the organization's characteristics before entering the organization.

Moreover, the more organizational information that job-seekers obtain, the higher their intention to apply for a job. On this basis, corporate reputation, organizational scale, social responsibility, and other external characteristics are more likely to be reported by advertisements, television, and other media. It is easier to have a positive impact on job applicants in the employment market.

3.2 Principles of AHP

This article chooses the Analytic Hierarchy Process (AHP) to construct the Employer Value Proposition (EVP) competitiveness model. AHP is a decision-making method that combines qualitative and quantitative analysis. This method first processes the research objectives in layers, divided into three layers: the target layer, the criterion layer, and the index layer. Secondly, the judgment matrix is constructed by comparing two elements, and then the relative weight of each component is calculated. Then, the consistency test is used to verify the correctness of the judgment matrix. Finally, each index's weight is obtained by sorting the calculation results, and the problem is analyzed and solved. The evaluation model of the competitive level of employer Value proposition established in this article is based on the AHP calculation method.

3.3 The Calculation Steps of Evaluation model of the competitive level of the employer Value proposition

Step 1: Establish a hierarchy of EVP competitiveness. According to the interrelationship between

decision-making goals and the elements, the EVP competitiveness evaluation elements are divided into the highest level and the lowest level, and the hierarchical structure diagram is drawn. The highest level is EVP competitiveness, which represents the purpose of decision-making, and it is represented by A. The middle layer is the main factor of the EVP competitiveness hierarchy model, which includes job characteristics, working environment, employer reputation, salary and welfare, development, and promotion space, and they are represented by B1, B2, B3, B4, and B5 respectively.

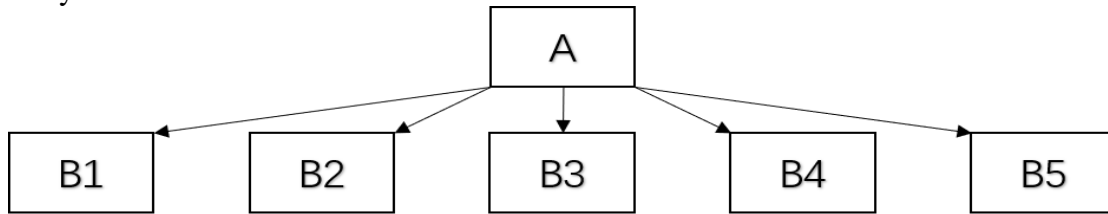


Figure. 1 EVP competitiveness hierarchy

Step 2: Construct a judgment matrix. Constructing a judgment matrix is the key to the analytic hierarchy process. If we only determine the weight of different factors at different levels but do not carry out qualitative analysis, then the conclusions drawn will not be convincing^[15]. When establishing the judgment matrix for pairwise comparison, according to the frequency of the relevant EVP elements in the recruitment information, the higher the frequency of occurrence, the more critical it is; the lower the frequency, the less important it is. The 1-9 scale method is used. This article defines the frequency-distance formula as follows.

$$d_i = 2 \frac{x_i}{x_i + x_{i+1}} - 1$$

Where d_i represents the frequency-distance of the i th competitiveness factor relative to the $i+1$ th competitiveness factor, and x_i represents the frequency weight of the i th competitiveness factor in all competitiveness factors.

When $d_i > 0$: if d_i is between 0 and 0.11, then mark it as 1. If d_i is between 0.11 and 0.22, then mark it as 2. If d_i is between 0.23 and 0.33, then mark it as 3. If d_i is between 0.33 and 0.44, then mark it as 4. If d_i is between 0.44 and 0.55, then mark it as 5. If d_i is between 0.55 and 0.66, then mark it as 6. If d_i is between 0.66 and 0.77, then mark it as 7. If d_i is between 0.77 and 0.88, then mark it as 8. If d_i is between 0.88 and 1.0, then mark it as 9.

When $d_i < 0$: if $|d_i|$ is between 0 and 0.11, then mark it as 1. If $|d_i|$ is between 0.11 and 0.22, then mark it as 1/2. If $|d_i|$ is between 0.23 and 0.33, then mark it as 1/3. If $|d_i|$ is between 0.33 and 0.44, then mark it as 1/4. If $|d_i|$ is between 0.44 and 0.55, then mark it as 1/5. If $|d_i|$ is between 0.55 and 0.66, then mark it as 1/6. If $|d_i|$ is between 0.66 and 0.77, then mark it as 1/7. If $|d_i|$ is between 0.77 and 0.88, then mark it as 1/8. If $|d_i|$ is between 0.88 and 1.0, then mark it as 1/9.

Step 3: Check the hierarchical ranking and consistency. In the hierarchical sorting, the largest

eigenvector of the judgment matrix needs to be calculated and normalized. Then perform single hierarchical sorting. After sorting, by looking up the CI value and calculating the RI value, the consistency ratio CR is calculated, and the consistency test is judged according to the CR. The specific formula is as follows:

$$A\omega = \lambda\omega$$

$$CI = \frac{\lambda - n}{n - 1}$$

$$CR = \frac{CI}{RI}$$

Where A is the judgment matrix, and ω is the weight vector of the judgment matrix. λ is the largest characteristic root of the judgment matrix. CI represents the consistency index. If CI is equal to 0, it means complete consistency. If CI is close to 0, there is satisfactory consistency. And the higher the CI value, the more serious the inconsistency. RI is a random consistency index, which is used to measure the size of CI. RI can be obtained by looking up the table. CR represents the consistency ratio. When CR is less than 0.1, the degree of inconsistency is considered within the allowable range, and there is satisfactory consistency, and the consistency test is passed.

Step 4: Determine the index weight and solve EVP competitiveness. After passing the consistency test, the weight of each competitiveness factor is obtained. Use the following formula to calculate EVP competitiveness according to the weight of each indicator.

$$EVP_c = \sum_{i=1}^n x_i \omega_i$$

Where EVP_c represents the competitiveness of the employer's value proposition. x_i represents the frequency weight of the i th competitiveness element of all competitiveness elements, and ω_i means the weight of the i th competitiveness element.

4. Empirical analysis

4.1 Data source and data processing

Choose China's Liepin website as the data source website. The data search criteria are limited to Shanghai, and the job keywords are Python and use Python crawler technology to crawl the recruitment information that reflects EVP. Finally, write the crawled data into an Excel file.

After obtaining the detailed text link, there are a total of 4036 pieces of data. It needs to be filtered in the follow-up, and the data of the direct recruitment of the enterprise is retained. Finally, there are 2204 pieces of data remaining. The 2204 bits of data were crawled a second time to reflect the EVP recruitment information, and 2136 pieces of recruitment information that reflected the EVP were successfully obtained. Data processing such as grouping and de-duplication of the finally qualified 2136 bits of data was carried out, and the recruitment information of 769 companies was obtained. Unify EVP recruitment information with a similarity greater than 0.75% into one EVP recruitment information, and get 254 EVP recruitment information after unification.

4.2 Construction of judgment matrix and consistency check

The EVP recruitment frequency is compared in pairs, and a judgment matrix is constructed based on this. By comparing the work characteristics with the work environment, it can be found that the work characteristics account for 0.96, the work environment accounts for 0.04, and d is equal to 0.92, which is marked as 9. By comparing job characteristics with employer reputation, it can be found that job characteristics account for 0.45, employer reputation accounts for 0.55, and d is equal to -0.1, which is marked as 1. By comparing job characteristics with salary and benefits, the results show that job characteristics account for 0.24, salary and benefits account for 0.76, and d equals -0.52, marked as 1/5. By comparing job characteristics with development and promotion space, the results show that job characteristics account for 0.54, and development and promotion space account for 0.46, and d is equal to 0.08, which is marked as 1. In the same way, the tag value of other EVP's pairwise comparison can be obtained. The final judgment matrix is shown in the following table.

Table 1 A-B judgment matrix

A	B1	B2	B3	B4	B5
B1	1	9	1	1/5	1
B2	1/9	1	1/9	1/9	1/9
B3	1	9	1	1/5	2
B4	5	9	5	1	6
B5	1	9	1/2	1/6	1

The calculated weight vector is $\omega = (0.742, 0.131, 0.864, 3.032, 0.641)^T$. The largest characteristic root is $\lambda = 5.406$, and $CI = 0.1015$, $n = 5$. Look up the table and get $RI = 1.12$, then $CR = 0.091$, $CR < 1$, which meets the consistency. The following conclusions are finally obtained through the evaluation model of the employer value proposition's competitive level. The importance of EVP competitiveness is $B4 > B3 > B1 > B5 > B2$, which means that salary and benefits are more important than employer reputation. Employer reputation is more important than job characteristics. Job characteristics are more important than development and promotion space, and development and promotion space are more important than a work environment.

Sort and map EVP recruitment information. It can be seen from the figure that salary and benefits are the main factors of EVP competitiveness, and the next main factor is employer reputation. It is consistent with the conclusions obtained from the employer value proposition competitiveness hierarchy model, which means that the employer value proposition competitiveness hierarchy model has particular utility and can be used for case analysis of online recruitment.

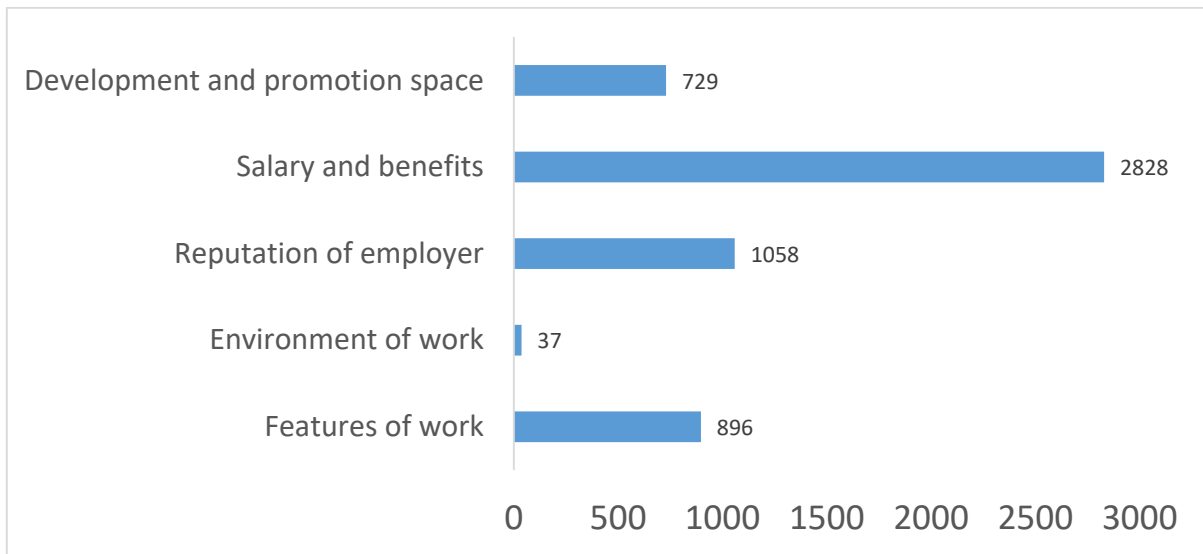


Figure. 2 Frequency chart of EVP recruitment information

4.3 Case Study of ByteDance and Baidu Online Recruitment

ByteDance, established in 2012, now has more products. ByteDance said that it would create a general search engine with an ideal user experience from 0 to 1, and it will be a search on the whole network, which will threaten Baidu to a certain extent. Baidu is a leading company in the Chinese search market. Therefore, the two companies are fierce competitors in recruiting talents for positions such as search algorithms. It is taking ByteDance and Baidu's online recruitment as examples to illustrate the effectiveness of the evaluation model of the employer value proposition's competitive level is more meaningful.

Crawling ByteDance and Baidu recruitment information from the Liepin website, the region is limited to Shanghai. Use "Baidu python" and "ByteDance python" as keywords to search for job information. After processing the data, make a bar chart as follows. It can be seen from the bar chart that Baidu and ByteDance both focus on promoting the reputation of corporate employers. However, in the entire bar chart, we can find that ByteDance focuses more on its salary and benefits, while Baidu focuses more on the reputation of the company.

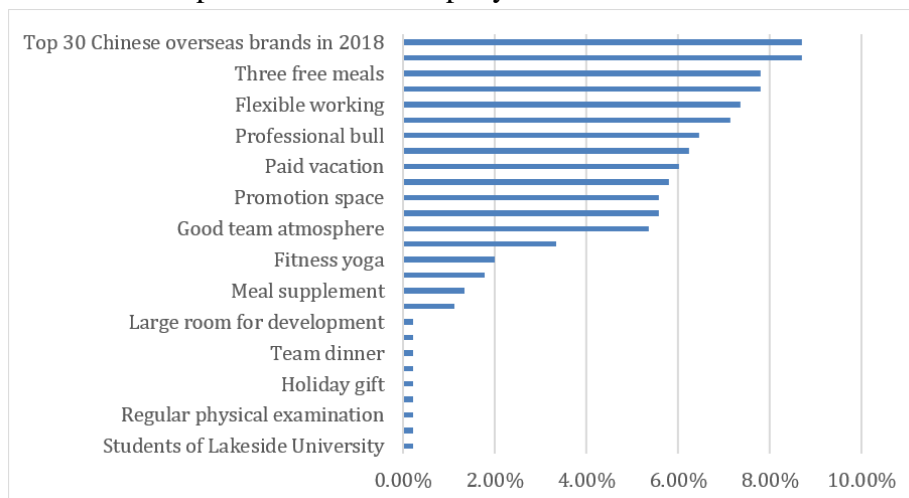


Figure. 3 Percentage of ByteDance's Some Welfare

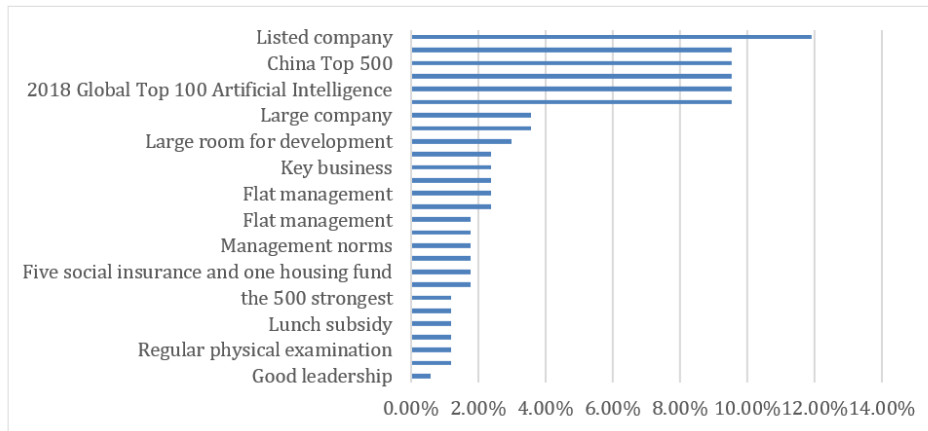


Figure. 4 Percentage of Baidu's Some Welfare

The employer value proposition competitiveness of Baidu and ByteDance is calculated according to the evaluation model of the competitive level of the employer value proposition. It can be seen from Table 2 that Baidu's EVPc value is 1.0812, which is significantly smaller than the ByteDance's EVPc value of 1.7500. It indicates that in the online recruitment of the Liepin website, job seekers are more willing to choose Bytedance if given a choice between Baidu and Bytedance for the same job type. This result is that Baidu and Bytedance have different grasps of the importance of factors affecting EVP competitiveness. Baidu believes that the ranking of influencing factors should be as follows: the importance of employer reputation is higher than salary and benefits; the importance of salary and benefits is more elevated than working environment; the importance of the working environment is higher than job characteristics; the importance of job characteristics is the same as development and promotion space. Bytedance believes that that compensation and benefits are more important than employer prestige; employer prestige is more important than the working environment; the working environment is more important than the job's characteristics. The features of the job are more important than the development and promotion space. However, from the perspective of 769 employers and through the verification of 254 EVP recruitment information involved in 2136 recruitment data, it can be seen that salary and benefits are more important than employer reputation; employer reputation is more important than job characteristics; job characteristics are more important than development and promotion space, and development and promotion space are more important than the work environment.

Therefore, Baidu should immediately adjust its strategy for using recruitment information in online recruitment and analyze competitors' strategic combinations in time. Besides, both companies believe that the importance of the work environment is ranked third. From the perspective of employers, both companies need to weaken the ranking of the work environment.

Table 2 Comparison table of Baidu and ByteDance beat EVPc values

Frequency	Characteristics of work	Environment of work	The reputation of the employer	Salary and benefits	Development and promotion space	EVPc
Baidu	0.0536	0.0833	0.6726	0.1369	0.0536	1.0812
ByteDance	0.0757	0.1180	0.2895	0.4588	0.0579	1.7500

5. Conclusion

When online recruitment is prevalent, this paper establishes an evaluation model of the employer value proposition's competitive level to study EVP's competitiveness in online recruitment. Help companies adjust their competitive strategies in online recruitment on time, and at the same time, enable companies to quickly quantify and grasp the design of EVP competitiveness elements and reduce corporate human resource costs. The last part of the article takes Baidu and ByteDance's online recruitment to illustrate the evaluation model's practicality of the employer value proposition's competitive level.

The evaluation model of the employer Value proposition's competitive level is based on the AHP calculation method. However, only the criterion layer is designed, and the scheme layer can be added in future research. Besides, industry variables can be added to future research.

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