Quantitative Index Construction of Website Influence: Taking China Private Universities as Example

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Abstract. Website influence is of great value to the brand promotion of private colleges and universities. This study collects the link index and traffic index data of private university websites in China, conducts relevant analysis, sorts out the relationship between link indicators and traffic indicators, and interprets the strategies of these indicators for brand promotion of private colleges and universities combined with case analysis.

Keywords: Private University, Website Influence, Link Index, Traffic Index

1. Introduction
The quantitative index of website influence is different from manual scoring, because it can quantify the influence of website and evaluate the influence of website effectively because it is based on the software mining to obtain the objective and real data reflecting the characteristics of the website operation process [1]. Therefore, the key to effective evaluation of the influence of the website lies in obtaining the objective core data. This paper will discuss how to obtain the data which can reflect the operation and visitors' characteristics of the website.

Cao (2011), collected data from 31 provincial education portal websites in China and conducted cross analysis of traffic indicators and link indicators. It was concluded that the quantitative method of education website evaluation, the comprehensive method based on link characteristics, is more effective in evaluating the influence of websites, while the network is more effective There is no obvious conclusion that the impact factors have on the evaluation of education portal websites. This conclusion conflicts with the common sense of network influence. In the pricing process of online advertising, traffic index is the direct and important reference for commercial value of advertising, while link index is seldom adopted in website evaluation because of low forgery cost and no effective screening tools and methods in the market.

Link index is a way to evaluate the influence of search engines on websites, and its relationship is that the evaluation of website influence highly relies on the provision of search engine data [2]. In recent years, Baidu company has adopted the way of reducing the weight and blocking the search results to promote its business, and the fairness has been seriously doubted by the industry [3]. Domestic first-class Internet companies with their own traffic have established we media platform to block Baidu's search. Tencent's Wechat platform is a remarkable example. Therefore, the evaluation of website influence has more practical value for the research results of user traffic index [4].
2. Design of Research Scheme

2.1 Explanation of Experimental Indexes
This experiment not only involves the common total pages, external links, internal links, UV, PV, the number of pages visited per capita, and the average stay time, but also continues to use two innovative concepts of Cao’s: external network influence factor (external link number / total page number) and internal network influence factor (internal link number / total page number).

This study will use the same research method as Cao’s. Including the same search engine command to capture the website traffic and link index data, and test the feasibility of this research method at present.

2.2 Experimental Design
This paper uses Baidu search engine and webmaster tools to collect the network links and traffic index data of 71 private university portal websites in China. Network traffic data indicators include: UV value, PV value, number of pages visited per capita, average stay time; link data indicators include: total number of pages, number of external links, number of internal links [5]. The experiment uses excel2016 and spss20.0 software for quantitative analysis, mainly through correlation analysis to determine the relationship between variables, and then reveals the effectiveness of link indicators and traffic indicators for website impact evaluation, and analyzes their causes, explores the inherent connection between link index data and traffic index data, and explores the integration of website evaluation using Webometrics model [6].

3. Data Processing and Analysis
Cross regression analysis (95% credibility) was conducted on 9 groups of data collected from 71 schools. The Pearson correlation (P value) is shown in Table 1: the regression analysis results of the number of pages visited per capita, the number of internal links and various indicators are less than 0.01, and there is extremely close correlation. The number of pages visited per capita, internal network impact factor, external network influence factor and other index value regression analysis were greater than 0.1, and the correlation was not significant.

Table 1. Pearson correlation in significance analysis of 71 colleges (P value)

|                | PV per Capita | UV   | PV   | AST   | Total Pages | Ex-Lin | In-Lin | Ex-Influence Factors | In-Influence Factors |
|----------------|---------------|------|------|-------|-------------|--------|--------|--------------------|----------------------|
| PV per Capita  | 0.731         | 0.195| 0.171| 0.104  | 0.398       | 0.000  | 0.012  | 0.04               | 0.37                 |
| UV             | 5             | 63   | 56   | 72    | 6           | 37     | 6                  |
| PV             | 0.653         | 1.5E-2| 4     | 5E-09 | 0.410       | 7E-28  | 6                  |
| AST            | 5E-09         | 8.2E-2| 6     | 9     | 1.3E-2      | 2.6E-2| 1                  |
| Total Pages    | 5E-09         | 1.7E-2| 4     | 82    | 0.012       | 5E-22  | 7                  |
| Ex-Links       | 4            | 6     | 82    | 4     | 84          | 4.2E-2| 1                  |
| In-Links       | 37           | 6     | 1     | 7     | 7           | 4.2E-2| 1                  |
4. Results and Interpretation

4.1 Average Stay Time
Li Yan (2011) proposed that the average stay time is the main index to analyze the influence of the website, which directly reflects the attraction of the website content to the visitors [7]. The use of the average stay time as an important indicator to evaluate the influence of the website is also reflected in the online advertising industry. The advertising pricing of most companies has been linked with the residence time of the website. It is considered that the index of staying time should be fully considered in network marketing. The results of this experiment are consistent with the above-mentioned views. The average stay time of the website can be used to evaluate the influence of the fluctuation of other five links and traffic data on the website influence.

4.2 Total Pages
In this study, the method to get the total number of pages is obtained by Baidu search engine site command, and its essence is the number of pages that a website can be retrieved by the search engine. Through and visiting the website administrators of many universities, we know that: a school website can generate more news, and more page content will be generated, so that the number of pages that can be included by the search engine will increase, and more pages will be included by the search engine, because this visitor can find the school website page through the search keywords, and enter the browsing behavior Turn into the website's browsing volume promotion. The experimental results show that there is a significant correlation between the total number of pages and UV value and PV value, which is consistent with the previous description of "school activities website traffic". We can know that if you want to get more traffic, you need to publish more content information on the website.

4.3 Pages Visited Per Capita
The significance of the number of pages visited per capita is to analyze the activity characteristics of visitors in the website, which is a manifestation of "Stickiness" of visitors. Liu Yanbin (2010) proposed that the number of pages visited per capita is high, which indicates that visitors are interested in the website as a whole [8]. There is a significant positive correlation between the frequency of asking, the duration of visit, the depth of visit and the amount of purchase. That is, the higher the frequency of visit, the longer the duration of visit, and the higher the number of pages visited, the higher the purchase volume. In this study, there is no significant correlation between the number of pages visited per capita and the total number of pages, the number of external links and the average length of stay. The increase of the total pages of private university websites can bring new visitors to the website, but it does not mean that more pages can be opened, which does not affect the behavior characteristics of visitors [9]. The results conform to our common sense The external recognition of the content of this page shows that the increase of the number of external links can not affect the number of pages visited per capita. In this case, it is more likely that the content of the private university website is relatively independent, and visitors are not interested in the content of adjacent pages, and do not need to click multiple times. There is no significant correlation between the number of pages visited per capita and the average length of stay before the data, which is a big doubt in this study, which can not be explained here.

4.4 External and Internal Network Influence Factors

| Ex-Influence Factors | 0.232 | 0.120 | 0.134 | 0.194 | 0.058 | 0.1585 | 2E-28 |
|---------------------|-------|-------|-------|-------|-------|--------|-------|
| In-Influence Factors| 0.322 | 0.195 | 0.206 | 0.171 | 0.107 | 0.4378 | 1.5E-2 |
| ce Factors          | 26    | 95    | 92    | 18    | 87    | 19563  | ...   |
In the experimental results, the P values of the external network influence factor and the internal network influence factor and other indicators are significantly uncorrelated. This conclusion is not consistent with the experimental results of Cao’s. There are three possible reasons for this result: firstly, the data captured by the third-party tool (webmaster's house) is not true when this research obtains data; secondly, there are some flaws in Cao's research; finally, with the change of the Internet business environment, the information sharing and cooperation of various Internet companies has been improved in the past, information islands have emerged in the industry. If the third conjecture is true, the external network influence factor and the internal network influence factor can no longer be used as the evaluation index of website influence.

5. Conclusion
This study uses relevant tools to collect the flow indicators and link indicators of private university websites, and conducts quantitative analysis. It finds that there is a significant correlation between the values of several indicators, which confirms the following things: first, the website stay time can be widely used as a reference index to evaluate the influence of the website on visitors; second, the total number of pages of the website can be increased Third, the number of pages visited per capita is not affected by the total number of pages and anti-chain value, and has no significant correlation with the average stay time. There is no obvious data and evidence to support. This index can be used to evaluate the influence of the website.

The influence change of private university website plays an important role in school operation. Different from public university, the change of enrollment situation of private university directly affects the school operation profit, and occupies an important position in the brand promotion of private university [10]. To improve the brand awareness of private colleges and universities, schools can take the following measures in website operation: first, increase the number of news pages on the website, and fill in more school activities on the website; second, strengthen the interaction with other network organizations, increase the number of network anti chain, scientifically and reasonably drain the school website; third, improve the copy level of page content in website operation, aiming at visiting Customer demand optimization page, increase visitors stay time.

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