Research on government website satisfaction evaluation system from the perspective of service-oriented government

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Abstract

Based on the perspective of service-oriented government, the analytic hierarchy process is used to construct the government website satisfaction evaluation system from four aspects: website design, information disclosure, online service and public trust. Based on this, put forward some countermeasures and Suggestions to improve the satisfaction of government websites from the perspective of service-oriented government.

Keywords

Government website ; satisfaction evaluation ; service-oriented government.

1. Introduction

At present, China is in a critical period of transforming government functions and building a "service-oriented government". It is particularly important to promote the innovation of government management methods and management concepts and to establish a transparent, efficient and resilient government. To build a government that is both efficient and responsible, we must improve the government's competitiveness. The core is to achieve government management innovation. E-government construction is the best way for the government to complete this kind of innovation. The performance of government websites can indeed see and understand the construction level of various elements such as application systems, information resources, network infrastructure, security systems and institutional guarantees in the e-government background. It can be seen that e-government construction is measured through the evaluation of government website performance. The results have certain feasibility and effectiveness. Therefore, this paper will use the government website evaluation as the entry point and breakthrough point for the evaluation of e-government construction.

2. Index system construction

2.1 Indicator selection

2.1.1 Website Design

The design of the government website must highlight the functional positioning of the government portal: first, the style of the government website should be beautiful and solemn; and the website navigation should be as close as possible to the various public usage habits; it should also provide comprehensive auxiliary functions, such as integration. A powerful search engine that helps its users easily access information and services. Finally, on the basis of repeated thinking and argumentation, the four secondary indicators of "Beautiful and easy to use, access speed, website navigation, and information inquiry" were set.

2.1.2 Information Disclosure

Information disclosure is the basic work of building a transparent government. Public information on government portals should focus on comprehensiveness and effectiveness. Comprehensive means that the government portal website realizes the comprehensive sharing of various economic and social information resources owned by the government. Effectiveness means that the government must pay

attention to the maintenance and update of information. The object of this satisfaction evaluation indicator system is the public. The information required by the public can generally be reflected through three levels of indicators such as "service information, government announcements, financial disclosures and regulatory documents".

2.1.3 Online Service

This indicator specifically measures how online services are provided to users on government websites. Online services should be the core content of government websites that provide public services to businesses and the public. Government portals should maximize access to services for the public and businesses. According to the different objects, the three-level indicators that are finally determined to serve the public are "service guide, online consultation, online office, and form download".

2.1.4 Public Trust

"Public trust" is equally important for government portals. Only by establishing and improving the public trust channels of government portals can citizens be guaranteed the right to participate and supervise. The realization of the goal of public trust should not only emphasize the construction of the public trust column of the government website, but also pay attention to the effect of communication between the enterprise and the public and the government. The assessment focused on four levels of indicators: "suggestions, opinion polls, mayor mail and rights protection.

Picture 1 Evaluation System

Primary Indicator	Secondary Indicators
Website Design	beautiful and easy to use
	access speed
	website navigation
	information inquiry
Information Disclosure	service information
	government announcements
	financial disclosures
	regulatory documents
Online Service	service guide,
	online consultation
	online office
	form download
Public Trust	suggestions
	opinion polls
	mayor mail
	rights protection

3. Determine the weight of each index of the evaluation system based on fuzzy AHP

Think of the entire satisfaction indicator system as a system in which these factors are mutually constrained and mutually influential. The comparison between many factors in these systems is often not described in a quantitative way, in which case semi-qualitative and semi-quantitative problems need to be translated into quantitative calculations. The analytic hierarchy process hierarchically complex the decision-making system and provides a quantitative basis for analysis and decision-making by comparing the importance of various related factors step by layer. The fuzzy analytic hierarchy process combines the analytic hierarchy process with the fuzzy comprehensive assessment. The analytic hierarchy process is used to determine the weights of the indicators in the evaluation

index system, and the fuzzy comprehensive evaluation method is used to evaluate the fuzzy indicators. Therefore, the fuzzy analytic hierarchy process was chosen.

3.1 Determine the weight set

Let the weight of the first-level indicator be Z, because A has four first-level indicators, then $Z=(z_1, z_2, z_3, z_4)$. Similarly, the weight set of the secondary indicators is A, B, C, D, respectively.

$A=(a_1, a_2, a_3, a_4)$

$B=(b_1, b_2, b_3, b_4)$

$C=(c_1, c_2, c_3, c_4)$

$D=(d_1, d_2, d_3, d_4)$

3.2 Determine the judgment matrix

Based on the previous one-month portal visit, the author invited a number of experts to jointly determine the relative importance of the corresponding factors in the evaluation system at each level, and then draw a judgment matrix.

The judgment matrix of the primary indicator is:

$$F_1 = \begin{vmatrix} 1 & 1/3 & 1/5 & 1/7 \\ 3 & 1 & 1/3 & 1/5 \\ 5 & 3 & 1 & 1/3 \\ 7 & 5 & 3 & 1 \end{vmatrix}$$

Similarly, the judgment matrix of the secondary indicators is F_A, F_B, F_C, F_D. Due to space limitations, here is not a detailed explanation. Next, the consistency check of each matrix is taken as an example of the first-level indicator of the public questionnaire:

$$CR_1 = 0.0433 < 0.10$$

It can be seen that the matrices have satisfactory consistency, and the CR values of other matrices are the same as above, and each matrix has satisfactory consistency. The eigenvectors of the above matrices are normalized as follows:

$$X_1=[X_A, X_B, X_C, X_A]^T=[0.0869, 0.1847, 0.4124, 0.8880]^T$$

Similarly, the feature vectors of the secondary index W_A, W_B, W_C, W_D can be obtained.

3.3 Identify and solve the second level evaluation matrix

According to Table 1, each evaluation matrix RA of the secondary indicators can be determined. Similarly, R_B, R_C, R_D can be obtained.

Since the secondary assessment matrix only reflects the extent to which each secondary assessment indicator affects a certain level of the assessment target, the weight of each assessment indicator should also be introduced. Therefore, the second-level evaluation results need to be synthesized by the following form of fuzzy transformation:

$$Y_A = W_A^T * R_A = (y_{11}, y_{12}, y_{13}, y_{14})$$
$$Y_B = W_B^T * R_B = (y_{21}, y_{22}, y_{23}, y_{24})$$
$$Y_C = W_C^T * R_C = (y_{31}, y_{32}, y_{33}, y_{34})$$

$$Y_D = W_D^T * R_D = (y_{41}, y_{42}, y_{43}, y_{44})$$

we use the following synthesis algorithm: (Y is the evaluation result matrix, y_{ij} is the degree to which the i-th level indicator belongs to the j-th evaluation level; $\wedge$ means that two variables take small operations, and $\vee$ means take big operations)

$$y_{1j} = (W_1 \wedge y_{1j}) \vee (W_2 \wedge y_{2j}) \vee \ldots (W_4 \wedge y_{4j})$$
$$y_{2j} = (W_5 \wedge y_{5j}) \vee (W_6 \wedge y_{6j}) \vee \ldots (W_8 \wedge y_{8j})$$
$$y_{3j} = (W_9 \wedge y_{9j}) \vee (W_{10} \wedge y_{10j}) \vee \ldots (W_{12} \wedge y_{12j})$$
$$y_{4j} = (W_{13} \wedge y_{13j}) \vee (W_{14} \wedge y_{14j}) \vee \ldots (W_{16} \wedge y_{16j})$$

Finally, the second evaluation matrix result Y is obtained. According to the above principle, $Y_A = W_A^T * R_A$

can be obtained. Normalize Y_A, we will get Y_A', and similarly we can get Y_B', Y_C', Y_D'. Then there are $Y_1 = [Y_A', Y_B', Y_C', Y_D']^T$

3.4 Solving the first level evaluation result matrix

Multiply the first-level evaluation index weights with the second-level evaluation result matrix to obtain the first-level evaluation result matrix:

$$Z_1 = X_1^T * Y_1 = X_1^T * [Y_A', Y_B', Y_C', Y_D']^T = (z_1, z_2, z_3, z_4, z_5)$$

In the formula, z1, z2, z3, z4, and z5 respectively indicate the degree of "very satisfactory, satisfactory, general, less satisfied, and very dissatisfied" in the five satisfaction levels of public satisfaction. The synthesis algorithm is still used here, and finally the result matrix is normalized. There is a public questionnaire:

$$Z_1 = X_1^T * Y_1, \text{, normalized to find } Z_1'.$$

3.5 Establishing an evaluation set

Let the evaluation set be V, and evaluate the indicators with the degree of "very satisfied, satisfied, general, less satisfied, and very dissatisfied". For better comparison, assign them to 9, 8, 7 respectively. 6,5, thus forming a quantitative evaluation set. Then there is

$$V = (9,8,7,6,5)$$

3.6 Calculating the integrated score

The evaluation results obtained by the above methods can only qualitatively reflect the degree of membership of the corresponding evaluation level, so in order to be able to present the results more intuitively, the evaluation results are quantified. The final score is available. $U_1 = Z_1' \cdot V$

4. Conclusion

In summary, the government can only establish a true "service-oriented government" by strengthening its interaction and responsiveness with online citizens and improving its service methods in continuous practice. At present, there are relatively few evaluation studies from the perspective of public satisfaction. Based on extensive research, this paper attempts to establish an objective and scientific evaluation index system, and uses fuzzy mathematics and analytic hierarchy process to determine the weight of each evaluation index. This is an evaluation of the government website. In particular, the era is developing, the functions of the government are constantly changing, and the assessment of government websites needs to change accordingly, and it is constantly improving in practice.

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