

A Web Survey Program Based on Computer Technology and Its Application to Evaluation Model about Youth Self-organizations in China

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Abstract—The network has become the second space for people in China, and network and youth self-organizations based on web-platform have influenced young people more than ever before. From the viewpoint of the overall development of youth and building a harmonious society, it's an important thing to reduce the negative influence of the network and strengthen the sustainable development of media ecology. The paper forecasts the developmental trend of adolescents by analyzing their current situation in China and builds the evolution model for youth self-organizations. This web survey program uses the IIS web server + ASP.NET service + SQL Server database. Survey.aspx could be generated in the server dynamically, so the web survey program can be achieved by computer. Finally, the paper suggests some advices to eliminate the negative effects of internet and to strengthen youth self-organizations.

Index Terms—youth self-organizations; internet media; grey forecasting model; analytic hierarchy process; Web Survey program

I. INTRODUCTION

Three decades after reform and opening up, China has undergone enormous changes. Amateur live of Chinese people, young people in particular, has increased more rich and varied. In recent years, with progress in science and technology, communications, and popularization of the Internet, the network has become the second largest human space, by which the impact of it on youth is growing. Although network have brought great convenience for our times, the deterioration of its environment, such as network information pollution, network security crisis, private space crisis of network, the shortage and expansion of networks information, also seriously endangers the physical and mental health of youth. Therefore, from the perspective of the overall development of young people themselves, or for building a harmonious society, to consider how to reduce and eliminate the negative impact of network on youth and strengthen ecological civilization construction of network, has increasingly become an important issue to be settled urgently.

II. LITERATURE REVIEW

An Guoqi, Deng xiquan and Cao Kai (2006) pointed out that the Government has to face up to non-governmental organizations and the role of youth, and official organizations ought to take positive measures to guide and monitor the non-governmental organizations and effective role of youth [1]. Ma Chunlei (2007) considered that self-organizing system is still beyond our traditional work, by which the formation of its social forces deserves our attention and research particularly [2]. Shi Guoliang (2007) thought that youth organizations, especially the informal youth organizations, are increasingly becoming a social organization that have rapid development, strong vitality, increasing cohesiveness, and influence [3]. Xu Rong and Zheng Chen (2007) suggested an educational management method that the active roles of informal organizations in students ought to be played and their negative effects should be controlled [4].

Zeng hong considered we should concern with the composition and behavior characteristics of Internet users primarily for how to design web survey program. According to the Chinese Internet Network Development survey data in Chinese Internet Network Information Center (CNN IC), he made a quantitative analysis in the composition and behavior characteristics of Chinese Internet users, and then discusses the network survey design effects [5].

The paper achieves the web survey program through the IIS web server + ASP.NET service+ SQL Server database. Study on China's youth self-organization based on media ecology perspective, this article suggests that ecological construction of young self-organization need to be strengthened and ecological environment of China's internet media should be optimized to promote diversity, rationalization and ecology distribution to strengthen the full development of youth and harmonious society building.

III. ANALYSIS OF INTERNET YOUTH USERS IN CHINA

A. *The status quo of internet Youth users in China*

With the advent of the information age, improvement of communication facilities and increasing of people's income level, the Internet is getting into millions of households.

The scale of Chinese internet user has showed the trend of sustained and rapid development, In June 2008, the number of Chinese Internet users is 4.52 times than it in June 2002. In June 2008, the number reached 25.3 million, ranked first in the world. In June 2008, the number of Internet users under 24 years old is 4.15 times than it in June 2002. An increase from 18 to 24 year old Chinese Internet users is 3.50 times than it in June 2002.

B. *Trends forecast Youth Internet users*

In this paper, GM (1, 1) model is used to predict the size of China's young Internet users and Internet users. The gray system theory is proposed by Professor Deng Julong, a China scholar, in the 1980's, which is used to control and prediction and is widely applied in agriculture, socio-economic and other fields [6]. In this paper, GM (1,1) model is used to forecast China's total Internet users and its change in the trend. The simulation model and the residual difference are shown in table I. As a result of $p = 1.0000$, $c = 0.1942$, the current model is in a very good level of prediction.

TABLE 1 CHANGES OF THE TRENDS IN THE TOTAL NUMBER OF CHINESE NETIZENS

Sequences	Original value $x^{(0)}(i)$	Predictive value $\hat{x}^{(0)}(i)$	Residual errors $\epsilon^{(0)}(i)$	Relative errors (%)
X(2)	5910.0000	5127.3129	782.6871	13.2434
X(3)	6800.0000	5868.6508	931.3492	13.6963
X(4)	7950.0000	6717.1758	1232.8242	15.5072
X(5)	8700.0000	7688.3857	1011.6143	11.6278
X(6)	9400.0000	8800.0191	599.9809	6.3828
X(7)	10300.0000	10072.3790	227.6210	2.2099
X(8)	11100.0000	11528.7046	-428.7046	-3.8622
X(9)	12300.0000	13195.5944	-895.5944	-7.2813
X(10)	13700.0000	15103.4933	-1403.4933	-10.2445
X(11)	16200.0000	17287.2477	-1087.2477	-6.7114
X(12)	21000.0000	19786.7426	1213.2574	5.7774
X(13)	25300.0000	22647.6296	2652.3704	10.4837

The predicted results of other variables (18 ~ 24 years of age the number of users) is available similarly, of which the proportion of 18 to 24 years old of Internet users is get through each stage netizens divides total number.

As can be seen through the forecast, the next three years the total number of Chinese Internet users and the number of Internet users of 18 - 24 years old will

continue to increase. In June 2011, the number reached 13.893 million, the Chinese youth will account for about 27.24 percent of China's total Internet users.

It is generally believed that China's rapid development of Internet network bring about opportunities for the youth self-organizations' flourish. The Internet goes into millions of households, in which its fashion and convenience attract a lot of young people involved. Internet provides equality, freedom, easy platform exchange for young people's activities, by which it brought more opportunities for the formation of self-organizations. Low-cost of Internet resources' network configuration also carries out facilitations for the formation of self-organizations' establishment, management and activities.

IV. INVESTIGATION DESIGNATION OF YOUTH SELF-ORGANIZATIONS BASED ON INTERNET MEDIA PROSPECTIVE

A. *Index system for youth self-organizations evaluation and its quantification*

In this paper, four-level index system is used to evaluate youth self-organizations, in which the target level is youth self-organizations indicators index, criteria level includes eight indicators used to measure the members' feeling of youth self-organizations, indicator level includes a total of 28 indicators and the last level mainly includes questionnaire design for indicator level.

B. *Determination Indicators' Weights*

In this paper, evaluation system of indicators of youth self-organization is composed of the multi-level index cluster. It constructs judgment matrix structure after seeking the advices from experts and determines weigh by mathematical treatment in some forms. Therefore, this article will make it more scientific to combine qualitative and quantitative weigh determination by Analytic Hierarchy Process (AHP) [7].

Analysis Hierarchy Structure are Constructed with Index System for the Calculation, which includes object layer A; rule hierarchy B1 ~ B8; individual indicators are just index hierarchy. After using "1 to 9 scales", judgment matrix of the criteria to the objective is constructed. It is important to carry out Consistency test of judgment matrix and level-ranking, which can be seen in table II.

TABLE 2 CONSISTENCY TEST OF JUDGMENT MATRIXES

	CI	CR
A	0.0721	0.0511
B1	0.0018	0.0032
B2	0	0
B3	0.0652	0.0693
B4	0.0853	0.0761
B5	0.0193	0.0332
B6	0.0198	0.0220
B7	0.0193	0.0332
B8	0.0046	0.0079

Under such circumstances, the judgment matrixes of the CR are less than 0.10, which can be considered sort of single-level structure with consistency. As results, Hierarchy general ranking results are as follows:

$$W'_{B1} = [0.1427 \ 0.0269 \ 0.0506]' \quad (1)$$

$$W'_{B2} = [0.0075 \ 0.0075 \ 0.0226]' \quad (2)$$

$$W'_{B3} = [0.0041 \ 0.0095 \ 0.0160 \ 0.0294]' \quad (3)$$

$$W'_{B4} = [0.0480 \ 0.0032 \ 0.0060 \ 0.0151 \ 0.0205]' \quad (4)$$

$$W'_{B5} = [0.0158 \ 0.0390 \ 0.0962]' \quad (5)$$

$$W'_{B6} = [0.1904 \ 0.0692 \ 0.0316 \ 0.1073]' \quad (6)$$

$$W'_{B7} = [0.0107 \ 0.0018 \ 0.0043]' \quad (7)$$

$$W'_{B8} = [0.0134 \ 0.0041 \ 0.0074]' \quad (8)$$

These matrixes from (1) to (8) are the corresponding weights of single indicators.

V. EMPIRICAL ANALYSIS OF PROGRAM DESIGN

A series of investigations are carried out in a university surrounding schools via the design of the questionnaire of the authors, by which some youth self-organizations are known, 15 self-organizations being more influential and Internet-based, can be selected to be conducted a questionnaire survey on. The specific names of self-organization are as follows: Economic Research Institute (Y01), Employment and Entrepreneurial Associations of University Students (Y02), Mutual Assistance Center of college students (Y03), Students Association of Financial Investment (Y04), Association of popular science of Students (Y05), Computer Association (Y06), Basketball Association (Y07), Table Tennis Union (Y08), Management Institute (Y09), Art Troupe of university students (Y10), Advertising Art Association (Y11), English Society (Y12), Green IN Society (Y13), Association of Wushu Enthusiasts (Y14) and Press Corps of university students (Y15). According to tests in among small proportion of their numbers, the revised final version, including 28 issues, is concluded. Because of limited space, the programs do not list; and it can be obtained from the author if necessary.

Because of the difficulty in implement stabile retest reliability, most questionnaires use consistency reliability testing generally, in which reliability coefficient α is the most commonly used method. Cronbach α , being reliability coefficient, can be used for test of consistency. In general, α may be accepted if it is larger than 0.5. If the reliability coefficient is greater than 0.7, it means a very high reliability; when the range between 0.7 and 0.35, it means so-so; if it is less than 0.35, it means low reliability. Web survey can be carried out through emails, by which emails with questionnaire send.

VI. ACHIEVEMENT OF INTERNET SURVEY PROGRAM

A. Introduction

This web survey program uses the IIS web server + ASP.NET service+ SQL Server database. Survey.aspx could be generated in the server dynamically.

The entire program is divided into three layers: client layer, service layer and data layer. Client base in the surveyed users computers. The user could request survey.aspx page by IE browser. Service layer in the IIS web server, survey.aspx is generated in the IIS server dynamically and passed to the customer's IE browser. Data layer in the SQL Server database; all the issues involved in the web survey, survey and the user participated in the investigation are stored in the database. The hierarchical structure as shown in Figure 1:

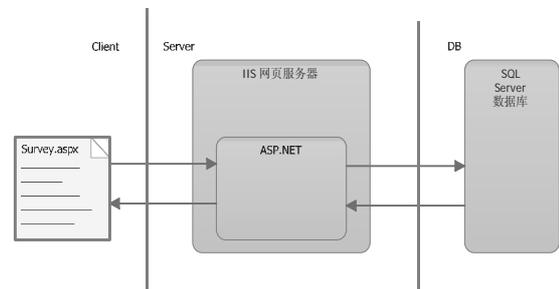


Figure 1 hierarchical structure chart

B. Design

For this program, the design includes class design in server and database design in data table.

1. class design

Mainly survey.aspx web pages generated dynamically. Survey.aspx initially only contains the user table information and the submit button, the specific details are shown in survey.aspx file. For different request survey class handle survey web pages and the result web pages dynamically generated.

Survey class view is as follows:

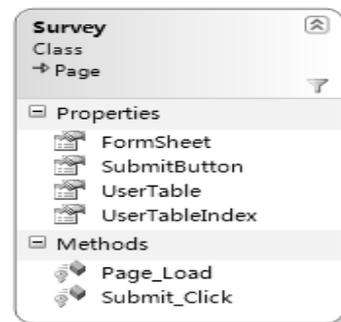


Figure 2 Survey class view

In the class, Page_Load () function is executed for each user apply for survey.aspx page, according to different application parameters sub-function generated different pages dynamically. In order to build the survey and result web page in the web survey, we design two different classes: Submit Page Creator and Result Page Creator. Submit Page Creator class is used to generate the

survey website; Result Page Creator class is used to generate the result page. Their class diagram as follows:



Figure 3 Submit Page Creator and Result Page Creator class chart

In Survey class, Submit_Click () function is executed when the user clicks on the submit button each time. This function collects the information in survey and user tables, to keep the information to the database.

2. The design of the data table structure

The network survey program involves 7 data table: ref_Organization, ref_QuestionType, ref_Question, ref_SurveyCatalog, Survey, Survey_Detail and User table.

1) Ref_Organization table

The table saves the information of survey; the table structure is defined as:

Column Name	Data Type	Allow Nulls
ID	numeric(18, 0)	<input type="checkbox"/>
Name	ntext	<input type="checkbox"/>
Description	ntext	<input checked="" type="checkbox"/>

Figure 4 Ref_Organization table structure chart

ID is used to identify each organization; Name is the organization's name; Description gives a brief description of the organization.

Ref_Question Type table

The table holds the type of survey questions. The table structure is defined as:

Column Name	Data Type	Allow Nulls
Type	nchar(10)	<input type="checkbox"/>
Choices	ntext	<input type="checkbox"/>
Weights	ntext	<input checked="" type="checkbox"/>
Description	ntext	<input checked="" type="checkbox"/>

Figure 5 Ref_Question Type table structure chart

Type is used to identify each problem type; Choices is all the alternative answers for the kind of problem (separated different answers by semicolon); Weights is scores for the corresponding optional answer (separated

different scores by semicolon); Description is a brief description of such problems.

Ref_Question table

The table holds all the survey questions. The table structure is defined as:

Column Name	Data Type	Allow Nulls
ID	numeric(18, 0)	<input type="checkbox"/>
Name	ntext	<input type="checkbox"/>
Type	nchar(10)	<input type="checkbox"/>
Description	ntext	<input checked="" type="checkbox"/>

Figure 6 Ref_Question table structure chart

ID is used to represent each problem; Name gives the content of issue; Type specifies the type of problem; Description gives a brief description of the problem.

Ref_Survey Catalog table

The table holds all the web survey by the system launched. The table structure is defined as:

Column Name	Data Type	Allow Nulls
CatalogID	numeric(18, 0)	<input type="checkbox"/>
Questions	ntext	<input type="checkbox"/>
Organizations	ntext	<input type="checkbox"/>
ValidSurveyCount	int	<input type="checkbox"/>
TotalSurveyCount	int	<input type="checkbox"/>
Descriptions	ntext	<input checked="" type="checkbox"/>

Figure 7 Ref_Survey Catalog table structure chart

CatalogID is used to distinguish different surveys; Questions gives all the problems in the survey (separated different issues by semicolon); Organizations gives all the surveyed organizations involved in the survey (separated different organizations by semicolon); Valid Survey Count represents the total number of all valid questionnaire in the survey; Total Survey Count represents the total number of all submitted questionnaire in the survey; Descriptions gives a brief description for this questionnaire.

2) Survey table

The table participates in the questionnaire submitted by the user each time through save the system. The table structure is defined as:

Column Name	Data Type	Allow Nulls
ID	numeric(18, 0)	<input type="checkbox"/>
CatalogID	numeric(18, 0)	<input type="checkbox"/>
UserID	numeric(18, 0)	<input checked="" type="checkbox"/>
Time	datetime	<input checked="" type="checkbox"/>
Valid	bit	<input checked="" type="checkbox"/>
SourceIP	nchar(15)	<input checked="" type="checkbox"/>

Figure 8 Survey table structure chart

ID is used to identify this survey questionnaire; CatalogID represents the questionnaire belongs to which network survey; UserID represents the user ID who submitted the questionnaire; Time represents the submitted time of questionnaire; Valid indicates the validity of this questionnaire; SourceIP represents the IP address submitted to the client in the questionnaire.

3) Survey_Detail table

The table holds each question and participates in the user's choice in the entire questionnaire. The table structure is defined as:

Column Name	Data Type	Allow Nulls
SurveyID	numeric(18, 0)	<input type="checkbox"/>
QuestionID	numeric(18, 0)	<input type="checkbox"/>
OrganizationID	numeric(18, 0)	<input type="checkbox"/>
Record	float	<input type="checkbox"/>

Figure 9 Survey_Detail table structure chart

SurveID identifies each specific survey item in the questionnaire. QuestionID gives the question identity involved in this investigation; OrganizationID gives the organization identity involved in this investigation; Record shows the results of the survey items.

4) User table

The table holds the detail of the involved user. The table structure is defined as:

Column Name	Data Type	Allow Nulls
ID	numeric(18, 0)	<input type="checkbox"/>
Gender	ntext	<input type="checkbox"/>
AgeRange	ntext	<input type="checkbox"/>
Domain	ntext	<input type="checkbox"/>
Name	ntext	<input checked="" type="checkbox"/>
Email	ntext	<input checked="" type="checkbox"/>
Address	ntext	<input checked="" type="checkbox"/>
Comments	ntext	<input type="checkbox"/>

Figure 10 User table structure chart

ID is used to identify each user; Gender gives the user gender; AgeRange gives the age range of users; Domain gives the industry of user; Name gives the user's name; Email gives the e-mail of users; Address gives the contact of user; Comments gives additional user information.

C. Demonstrate

User need to provide id parameter to apply for survey.aspx, this parameter is used to distinguish different web survey. The IE browser displays as follows:



Figure 11 Web survey chart

In the table, the users make a choice for the overall impression of 15 self-organizations, options can be divided into very satisfied, satisfied, more satisfied, in general, less satisfied, dissatisfied, very dissatisfied. However, if the users have not participated in the self-organization, some of the problems they are not interested or do not know the answer, please do not answer.

Finally, the user provides some necessary personal information.



Figure 12 Personal information chart

In the table, the users need to select the relevant information, including gender, age range, and professional. If the users need the results of this survey, please provide name, address, zip code, and Email.

After the user clicks the submit button, according to different user information, it will show different findings slightly. In the result page of web survey, for each question, page provides to the total users number of answering the question and the current result. The result represents by the color section, the shorter color section, the closer to green, and the result is more close to the left of alternative answers in the list.

When the user to provide personal contact, the result page as shown below:



Figure 13 Web survey results chart

In the table, we can see the web survey results for the overall impression of 15 self-organizations; the second column shows the number of result options.

After the user provides personal contact, the results as shown below:



Figure 14 Web survey results chart

The table shows that the latest survey results will be sent to the user's e-mail or postal address.

VII. CONCLUSIONS

Different types of self-organizations have different impacts on the growth of young people, while young people also have their own objective assessment of different self-organizations. The diversification, co-existence and symbiosis of self-organizations will enrich the lives of young people and promote the comprehensive development of youth. At present, network environment should be optimized to provide good platforms for young and healthy development of self-organization.

The development of Networks is breaking down the temporal and spatial boundaries of ideological and political education and provides new opportunities for further strengthening of educational influence.

Through the building of network platform, new moral space could be opened up. Strengthening the building of communication channels can help students explore a variety of ideological confusion or communication issues freely with their teachers, parents and students and keep abreast of all kinds of information in society, by which expectations of communities, school and parents are conducted together through the network society.

These will cherish the transfer for students to increase the original space of narrow education into whole society and develop ideological and political education, which make the original lag content of ideological and political education into a more forward-looking for students. The timeliness of content makes room for the ideological and political education that be extended to the entire network. Publicity through the network, young people may know that indulging in online games is dangerous. Understanding, proper use of the Internet and ability to selection of useful information will enhance their own ability to resist information pollution.

It is believed that through the integration of network information and practical resources, combining with the establishment of a good cultural atmosphere of the network, various types of self-organization will strengthen exchanges and cooperation among them. Meanwhile, vigorous, healthy and civilized organization activities could enrich the lives of amateurs of youth.

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