

Construction of an evaluation system for information openness of local governments^①

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Abstract Evaluating government openness is important in monitoring government performance and promoting government transparency. Therefore, it is necessary to develop an evaluation system for information openness of local governments. In order to select evaluation indicators, we conducted a content analysis on current evaluation systems constructed by researchers and local governments and the materials of a case study on a local government. This evaluation system is composed of 5 first-tier indicators, 30 second-tier indicators and 69 third-tier indicators. Then Delphi Method and Analytic Hierarchy Process (AHP) Method are adopted to determine the weight of each indicator. At last, the practicability of the system is tested by an evaluation of the local government of Tianjin Binhai New Area, which has been undergoing administrative reform and attempting to reinvent itself in the past 5 years.

Keywords Freedom of information, Information openness, Government openness, Evaluation indicator system, Content analysis

1 Introduction

Nearly 90 countries around the world have now adopted comprehensive *Freedom of Information Acts* to facilitate the access to records held by government bodies and another 50 have pending efforts^[1-2]. Since the *Regulations of the People's Republic of China on Open Government Information (OGI Regulations)* came into force in May 2008, although significant changes have been made, people filed lawsuits against central and local government agencies over information disclosure now and then. To implement the *OGI Regulations* more effectively, it is necessary to set up a unified criterion for an effective assessment of the degree of the openness in local governments at different levels.

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In recent years, an increasing number of studies have been conducted on government performance evaluation, some of which have listed government openness as one of the contents for evaluation^[3-4]. After the promulgation of the *OGI Regulations*, local governments have successively developed various self-assessment methods to evaluate how different government agencies respond to the new regulations. Although these methods are uncomplicated and easy to use in practice, some of them have problems such as comprising too many qualitative, incomplete or ambiguous indicators, having unreasonable indicator structures, or ignoring indicator weights. In addition, the different assessment criteria are useless in comparing and ranking the performance of different governments. This paper aims to construct a comprehensive evaluation indicator system for the open government information work of local governments. In order to get effective indicators, content analysis is used to analyze the current evaluation systems and a case study is conducted to select evaluation indicators.

2 Literature and practice review

Literature studies show that the studies of government openness in China and those in other countries are not synchronous. With the promulgations of *the Freedom of Information Act (FOIA)*, *the Government in the Sunshine Act*, *the Privacy Act*, *the Paperwork Reduction Act*, *the Management of Federal Information Resources* and other state laws or regulations on freedom of government information in the United States after the 1960s, the major research topics were focused on public access to government information^[5-6], the balance between disclosure and secrecy^[7-8], control to the misuse of privacy information^[9], government employees leaking secrets^[10] and the role of public libraries in access to government information^[11-12]. In the 1990s, with the publication of new FOIAs by some countries and the rapid development of IT and the Internet, researchers in the area of freedom of information legislation gradually turned their attention to e-government and focused on electronic information sharing. A large number of studies on e-government including those on open government were published in the UK, Canada, Australia, Japan, China and other countries, covering multidisciplinary fields including law, information technology, information resources management and government management.

In China, before the release of the *OGI Regulations* in 2008, a number of papers introduced the *Freedom of Information Act* and other information laws of the United States and other countries and discussed the necessity, feasibility and urgency of Chinese FOI legislation. After 2008, Chinese researchers began to pay attention to the performance evaluation of government information disclosure. Nevertheless,



there are relatively fewer published research papers focused on the performance evaluation of open government.

At present, researches on performance evaluation of open government can be classified into 3 categories: 1) Evaluation researches by scholars, 2) self-assessments by governments themselves, and 3) evaluations on the openness of the government websites. These evaluations from different perspectives are complementary in some aspects, but in conflict in other aspects, which may affect the integrity of the performance evaluation of the open government.

2.1 Evaluation studies by research and consulting institutions

International evaluation researches conducted by scholars and non-government organizations were focused more on social perspective than government perspective. Keen used a sociological perspective for evaluating openness in government records by taking into account two aspects: Government information “haves” and “have-nots”^[13]. From 2003 to 2008, American non-profit organization Decrypting the Database of National Security Materials released 7 annual *Knight Open Government Survey Reports* to reveal how federal agencies had fared in improving agency disclosure of information through examining these agencies’ response speed and availability of the national confidential data that the *FOIA* requires to be made public regularly. There were some problems reported such as backlog and delayed reply, “false secret”, and inefficient websites construction^[14]. Hazell and Worthy^[15] evaluated the performance of the FOI regimes in the UK, Australia, New Zealand, Canada and Ireland by posing questions on the volume of requests, the success and failure rate of requests, and the performance of the appeal system. Eschenfelder and Miller^[16] built a social-technical evaluation toolkit based on social constructivist and democratic theory to measure openness in terms of the kinds of information available, and what sorts of citizen action the information facilitates, as well as its total quantity, including 3 parts: namely, 1) internal website/information characteristics, 2) elements to capture the social and political context of the information, and 3) assumptions about the roles of citizens and government information. These researchers paid more attention to the results of the *Freedom of Information Act*, including public access to government information and the impact that the public access can bring.

Similarly, Chinese researchers conducted studies more often from institutional or technical perspectives in order to find the problems in implementing the *OGI Regulations*. The reason may be that it is important to make the mechanism effective at initial stage. In March 2009, the Center for Public Participation Studies and Support (CPPSS) under Peking University launched an assessment project on the open government information work in China^[17]. Afterwards, the CPPSS published



2008 Annual Report on China's Administrative Transparency. This report focused on 5 major factors—system building, institution building, authorized disclosure, disclosure of government information on request and supervision and remedy, and constructed an evaluation indicator system containing 27 indicators in total. A total of 115 institutions of 31 provinces and 84 subsidiary agencies of the State Council were examined and annual reports of these institutions were adopted as information sources for evaluation. On Jan. 23, 2010, the CPPSS and the China Law Center of Yale Law School co-sponsored a seminar on the Development of the Open Government Information Assessment Index Evaluation and discussed the development and application of the system. As a fruit of the joint development, *China OGI Index Assessment System* came out in April 2010. The assessment system includes two versions: One for local governments and the other for agencies of the State Council. Every year from April to June, the survey team employs data retrieval and actual measurement methods for administrative transparency evaluation of provincial governments, subordinate agencies of the State Council, and some municipal governments and their subordinate agencies. In addition, Jiang and Sun used the E-government Administrative Ecology Index which emphasizes administrative environment, user's appraisal and benefit evaluation as a reference source and introduced the indicator of environmental adaptability so as to strengthen the evaluation of information utilization^[18].

2.2 Self-assessments by governments

Governments of the countries which have published or will publish *Freedom of Information Act* are active in performing self-assessments on the performance of an open government. The Obama administration has ordered each department and agency to create a new FOI annual report detailing request numbers and also delays^[19]. Transparency, participation and collaboration are thought to form the cornerstone of an open government and become the principles for government self-assessments. Take the Department of Commerce of the United States as an example, it used the latest published version of *the Commerce Open Government Plan* to perform a self-evaluation to assess just how well it can answer the 42 core and distinct questions/requirements of *the Open Government Directive* with *the Open Government Plan* on the following 5 aspects, “Formulating the Plan in the Open”, “Transparency Component”, “Participation Component”, “Collaboration Component”, and “Flagship Initiatives Component”. Among them, “Formulating the Plan in the Open” includes 4 questions: “Was multidisciplinary collaboration involved in formulating the plan?” “Was public consultation involved in crafting the plan?” “Was the plan published in an open format, online, on time and on the open government page and with raw data?” and “Is there a plan for continued public engagement as part of the review and modification of the open government plan?”^[20]



Many provinces and municipalities of China have successively issued various assessment methods since June 2008 in order to evaluate how their subordinate agencies respond to the OGI regulations. For the local governments at the provincial level and the direct-controlled municipalities, such as Beijing, Shanghai, Tianjin, Shaanxi, Jiangsu, Hainan, Guangdong and Jilin, the assessment methods mainly consist of 3 parts: 1) *Interim Measures for Assessment on Government Openness*, 2) *Interim Measures for Social Appraisal on Government Openness*, and 3) *Interim Measures for Responsibility Investigation of Violation of the Regulations of Government Openness*. Guangdong Province also issued the *Measures for the Management of the Coordinated Release of Government Information (Trial)*, which stipulates the requirement for the subordinate people's governments at the municipal, county and district level as well as the departments and agencies of the provincial government to implement the measures. Under the requirement and guidance of these measures, some city governments issued more specific measures for the appraisal of open government information work, such as Kashi of the Xingjiang Uygur Autonomous Region, Xuzhou of Anhui Province and Nanning of the Guangxi Zhuang Autonomous Region. Take Xianyang City of Shaanxi Province as an example, besides the three *Measures* which correspond to the provincial government, it also issued the *Assessment Standards for Information Openness of City Governments, Counties and Districts and the Assessment Standards for Information Openness of the Departments directly under the Municipal Authority*. The people's governments at the county, city and district level also issued the corresponding assessment measures which are more concrete and operational, such as Districts of Beijing, Counties of Shaanxi, Jiangxi and other provinces. For example, the Xiangfan City of Hubei Province issued the *Examination Scheme for Information Openness of Xiangfan* in 2010, which comprised 5 parts—targets of assessments, contents of assessment, examination methods, scoring methods and others, as well as the main government agencies of assessment for each department. Forty-four government agencies including the local Finance Bureau, Supervision Bureau, Audit Bureau, Development and Reform Commission, Public Security Bureau, Local Taxation Bureau, Office of Price Administration, Statistics Bureau and Judicial Bureau were examined.

The specific provisions of these assessment measures are various in different provinces in the country. The measure of Shaanxi Province mainly includes 3 parts: Current situations, system building and implementation, and institution building^[21]. The main contents of Guangdong Province include 5 parts: Agency support, current situations, information carrier construction, system building and implementation and public supervision^[22]. The Beijing Municipal Government's assessment standard is divided into the following 7 parts: 1) Organization and leadership, 2) mechanism construction, 3) voluntary disclosure, 4) disclosure upon application, 5) non-disclosure, 6) public satisfaction, administrative reconsideration and litigation, and



7) other related work^[23]. The measure of Nanning City consists of 11 parts: 1) Organization establishment, 2) the formulation of goal, plan, schemes for the year and the corresponding measures, 3) the formulation and updated version of the OGI guides and catalogs, 4) voluntary disclosure, 5) examinations for secrecy of government information to be disclosed and disclosure upon applications, 6) appropriate facilities and equipment, channels and public services for the public to obtain government information conveniently, 7) annual reports, 8) the number of administrative reconsideration and litigation cases that have been filed and their disposition, 9) construction and implementation of inspection, social appraisal and accountability systems and public satisfaction level, and 11) other relevant contents^[24]. The procedures of different provinces are basically the same. The assessment team formulates a program and sends the notices to the agencies which will be assessed. These agencies conduct a quantitative self-assessment with a total of 100 points, and submit reports to the assessment team. The team will finally give their opinion on the ranking of all the agencies based on a comprehensive examination and submit it to the government at a higher level for examination and approval.

Public appraisal is an important part of the self-assessment of local governments. It aims at involving public satisfaction, thus better supervising the governments. Public appraisal centers on the fundamental conditions for open government information, such as contents, time, ways, channels, facilities, systems and so on. In addition, it particularly emphasizes the service attitude of functionary-level staff, public satisfaction and measures to charge fees for providing government information. Taking Guangdong Province as an example, the contents of public appraisals include the following aspects: 1) Whether the contents comply with the relevant provisions of the *OGI Regulations*, 2) whether the information is comprehensive, true and accurate, 3) whether the time for open government data conforms to specific requirement, 4) whether the government agencies disclose information and update information timely, 5) whether the ways, channels, and facilities are convenient, effective, and easy to access, 6) whether the information disclosure systems are operational, and with sound mechanism put in place, 7) whether the applications are accepted and replied in accordance with the law, 8) whether the government agencies charge fees or grant exemption from or reduction of the fee according to the rules, 9) whether information disclosed fully plays the role of government information in serving the people's production, livelihood, and their economic and social activities, 10) whether the people's rights to know, to participate and to supervise are guaranteed, and so on. The assessment methods include questionnaire survey, online comments and colloquia. The public appraisal of Nanning City includes public appraisal and invited appraisal. The public can either make online comments on government websites, or entrust media or organizations to carry out



a questionnaire survey. Public appraisal accounts for 70% of the total reviews. Invited appraisal means that special reviewers are selected from the National People's Congress (NPC) members, Chinese People's Political Consultative Conference (CPPCC) members, the democratic parties, people's organizations, news organizations, industry organization staff and representatives of people for whom these government agencies provide service or by whom these government agencies are supervised. The invited reviewers are responsible for understanding the situation of open government information by visiting and interviewing people, attending colloquia and participating in review meeting and questionnaire assessment, and their assessment results account for 30% of the total reviews. The results are graded as "excellent, good, fair and poor" and the results are released by the mass media.

The above-mentioned information shows that the Chinese government has been continuously improving its supervision system for open government information work. The self-assessment and public appraisal provide forceful guarantee for governments at all levels in implementing *OGI Regulations*. Overall, the advantages of these self-assessment methods are being feasible, simple, easy to use, and having explicit evaluation guidelines, while their disadvantages should not be ignored, including (1) the assessment contents of different local governments are different and lacking in unified measuring standards, which makes it hard to conduct inter-government comparisons; (2) the selection of the indicators is arbitrary and there is a lack of scientific basis; (3) these indicators need to be completed and classified into different levels; (4) the rating system is quite subjective to some extent.

3 Research design

The purpose of this paper is to create an evaluation indicator system for information openness of local governments. Different from various self-assessment methods of local governments, this evaluation system concentrates on the scientific selection of indicators, the consistency of evaluation criteria and the comparability of evaluation results. Therefore, content analysis is adopted for indicator selection and Delphi Method and AHP Method are adopted to determine the weight of each indicator.

In order to guarantee the scientific selection of indicators, it is necessary to study both current methods for evaluating all open government initiatives and current information disclosure practices in different local government agencies. Therefore, apart from broadly investigating the present local government self-assessment methods, we conducted a case study on government openness. Content analysis is adopted to study these self-assessment methods and the materials of the case study and the results are employed for indicator selection. Content analysis is a quantitative empirical research method based on text content. It is more objective, less influenced



by the researchers and easier to use. It has been widely used in the fields of communication^[25], library and information science^[26], policy analysis^[27–28] etc. The application of content analysis in the construction of an evaluation indicator system mainly involves two aspects: namely, 1) to reach appropriate conclusions by analyzing the content of the existing evaluation system and 2) to propose evaluation indicators or put forward prediction methods based on content analysis. Spooner et al made a content analysis on the substitutive indicators of science performance^[29]. Firestone analyzed the content of cultural products, such as literature, movies and political speeches, and explored the possibility of developing group psychological and cultural indicators^[30]. Dai et al. improved a model for Event Impact Assessment (EIA) by content analysis on the media during Kunming World Expo 1999 and Shanghai World Expo 2010^[31]. Haken et al. studied the conflict evaluation and made prediction based on content analysis^[32].

This study is outlined in the following four steps. Firstly, we made a content analysis on the existing representative evaluation systems and self-assessment measures of local governments on information openness. Secondly, we selected Tianjin Binhai New Area as a representative case to study its government openness by interviewing key officials, reading documents and annual reports related with government openness, and at last we statistically analyzed the texts of the interview records and related data. Thirdly, we encoded the important concepts obtained during the above-mentioned two steps, categorized, and then obtained indicators. This process can be iterated till getting indicators at the highest level. Fourthly, Delphi Method and AHP Method were employed to determine the weight of each indicator.

4 The development of an evaluation indicator system for information openness of local governments

Indicator selection is critical in the development of the evaluation indicator system for information openness of local governments. The process of indicator selection is as follows:

4.1 Indicator selection based on content analysis on the current evaluation systems

4.1.1 Text sampling

Representative evaluation indicator systems developed by a research and consulting institute and self-assessment measures of local governments at all levels were selected as samples for content analysis, including 9 texts as “*Annual Reports on Chinese Administrative Transparency (2008)*”, “*China OGI Index Assessment*



System”, and self-assessment measures of Beijing, Shanghai, Guangdong Province, Shaanxi Province, Nanning City of Guangxi Province, Hefei City of Anhui Province, Hua County of Shaanxi Province. Table 1 displays the characteristics of these samples.

4.1.2 Coding

The first-level indicators and the second-level indicators in the samples are coded respectively. All the first-level indicators are extracted and classified into categories as the first-tier indicators of our evaluation indicator system. The frequencies of all the original indicators are computed respectively and accumulated as the frequencies of their corresponding categories. Considering there are many synonyms for some indicators at the second level, we standardize them into one statement as an indicator and calculate their cumulated frequencies. Those original indicators with too low frequencies are rejected. Those with high frequencies will be respectively subsumed under different first-tier indicators. Three levels of indicators are preliminarily selected in this step. The first-tier indicators are shown in Table 2 and the second-tier indicators are shown in Table 3.

4.2 Indicator selection based on content analysis of a case study on a local government

Selecting indicators only based on the existing evaluation indicator system is likely to result in the missing of some valuable indicators which are neglected by governments themselves. In order to ensure the completeness of indicators, we need to supplement some indicators from other sources, such as a case study of Tianjin Binhai New Area.

The establishment and development of Tianjin Binhai New Area is a strategic decision made by Tianjin Municipal Committee of the Communist Party of China (CPC) and in line with the strategic deployment of China’s 11th “Five-Year Plan” (from 2006 to 2010). Information openness is significant for the image improvement of the local government and it will undoubtedly help the local government to seize the opportunity for the further development. Our previous investigation shows that the government of Binhai New Area is facing an unprecedented challenge and opportunity in implementing the *OGI Regulations* as a new developmental zone. In recent years, the government of Binhai New Area has made a great progress in system building to promote government information disclosure and made significant achievements in e-government construction. Therefore, we reckon that Tianjin Binhai New Area is a typical example that can be used in our case study of government openness. In October 2010, we conducted half-structured interviews on open government with the leaders and staff from the Development and Reform



Table 1 Sample description

Samples	Published by	Year of publication	Examination time	Main components	Indicator setting
<i>The 2008 Annual Report on China's Administrative Transparency</i>	CPPSS under Peking University	2009		Origin and purpose Indicators and reasons Questions and suggestions	5 first-tier indicators 22 second-tier indicators
<i>China OGI Index Assessment System</i>	CPPSS under Peking University	2010	April to June	Introduction Simple list of index system The local government version of index system The agency version of index system	5 first-tier indicators 15 second-tier indicators 40 third-tier indicators
Beijing	The Beijing Municipal Government	2008	At the end of each year or the early of next year	General principles Content and standard Methods and procedures Use of the examination results Accountability system Supplementary regulations	7 first-tier indicators 39 second-tier indicators
Shanghai	The Shanghai Municipal Government			Three levels of indicators	5 first-tier indicators 15 second-tier indicators 47 third-tier indicators
Guangdong Province	General Office of Guangdong Province	2009	Generally every two years	Targets of assessment The principle Contents of assessment Procedures of assessment	5 first-tier indicators 20 second-tier indicators
Shaanxi Province	General Office of Shaanxi Province	2008		Targets of assessment Contents of assessment Procedures of assessment Methods of assessment	3 first-tier indicators 12 second-tier indicators



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Samples	Published by	Year of publication	Examination time	Main components	Indicator setting
Hefei	Hefei Municipal Government, Anhui Province	2008	From April to May	Targets of assessment Contents of assessment Procedures of assessment	Organizations The formulation and implementation of an annual plan The information on voluntary disclosure System building Public satisfaction
Nanning	Nanning Municipal Government	2009	From December, 2008 to January, 2009	Targets of assessment Contents of assessment Procedures assessment	Organizations The formulation and implementation of an annual plan The information on voluntary disclosure System building Public satisfaction
Hua County	Hua County Government	2010	Before the end of November	Targets of assessment Contents of assessment Methods of assessment	The information on voluntary disclosure The construction and implementation of working system Institution construction



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Table 2 Categories coding of the first-tier indicators based on existing evaluation systems

Names of the first-tier indicators in samples	Frequency of the first-tier indicators in samples	Categories coding of the first-tier indicators	Total frequency of categories
System (mechanism) building	6 times	Information access regime	11 times
Supervision system	3 times		
Remedy system	Twice		
Top leadership support (acting as facilitator)	4 times	Institution building for information disclosure	6 times
Institution building	Twice		
Disclosure upon application	4 times	Content construction for information disclosure	13 times
Voluntary disclosure	3 times		
Authorized disclosure	Once		
Situation of basic work	Once		
Situation of annual important work	Once		
non-disclosure	Once		
Business work	Once		
Specific work	Once		
Situation of information carrier construction	Once	Channels of information disclosure	Once
Complaint, administrative reconsideration, administrative litigation, and social appraisal	Once	Effects of information disclosure	Once

Commission, the Information Center, Informatization Office of Tanggu, one of three core districts of the Binhai New Area, as well as the staff of the archives, libraries of Tianjin Economic Developing Area, another core district of the Binhai New Area, and Tianjin Archives. The interviews run about 400 minutes in total length and they were recorded and sorted within 24 hours. At last, content analysis was adopted for the recorded interview materials and other related government documents.

The steps of content analysis on the case study materials are conceptual identification, frequency computation and category induction. At first, related concepts with government openness were identified and counted. Secondly, the concepts were analyzed and merged and 5 first-tier indicators were extracted. Most of the concepts could be merged into the first-tier and second-tier categories as shown in Tables 2 and 3. But after case study we had the 6th first-tier indicator “information infrastructure”. Then the frequencies of the first-tier indicators were added up and ranked according to the frequency in a descending order, as shown in Table 4. Some concepts which were neglected in the result of the analysis on the existing evaluation indicator systems were re-selected as additional second or third-tier indicators.

4.3 Determination of the structure of the indicator system

After repeated comparisons of the results of content analyses on sample assessments and case study materials and taking into account the fact that China’s information





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Table 3 The categories and occurrence frequency of second-tier indicators in samples^①

Contents of second-tier indicators	Frequency
Staff (personnel allocation, capability, specialization); supervision and safeguards (systems and institutions) channels; disclosing information upon application; confidentiality and investigation institution	6 times
Organization; OGI guide; OGI catalog; inspection system; accountability system; administrative reconsideration	5 times
Social appraisal system; annual report; work innovation	4 times
Administrative litigation; public satisfaction	3 times
Press spokesman system; examinations for secrecy of government's information to be disclosed; public access facilities; administrative complaint; voluntary disclosure; fee collection; coordination system; pre-planning the response; prompt and accurate disclosure	Twice

^① The second-tier indicators that have a frequency of once are in the following: Development of entity platform; development of virtual environment platform; working mechanism of voluntary disclosure; working mechanism of accepting the application for access to government information; the number of requests handled; ratio of requests for government information that are approved (including partial disclosure); ratio of electronic application forms; feedback evaluation of information quality (with the sum of administrative reconsideration/legislation as benchmark); self-examination and improvement; integrity degree and amount of information; standard services; self-examination of credit; information of whether staff fulfill their legal obligations; the formulation of the objective, plans, and schemes for the year, and the measures to achieve the objective; holding a meeting to study specific implementation measures; specialized business training; management of government information stored on paper; clarification of false or incomplete information; convenient measures; statistical data submission; situation analysis; editing bulletin and newsletters according to needs; undertaking of survey and research; non-disclosure in accordance with the law; the main problems existing in open government information work and the information on improvements; the instruction, supervision and inspection of the implementation of open government information by administrative agencies and governments at a lower level; remedies for individual cases.

Table 4 Coding analysis of the content in case study

Key concepts in case study materials	Frequency of occurrences	First-tier indicators	Total frequency of occurrences		
Government office	12 times	System building	47 times		
Training (staff and software)	12 times				
Information office	10 times				
Staff	10 times				
Responsibility assignment	Twice				
Subject of information openness	Once				
Network	8 times	Infrastructural construction	9 times		
Construction of hardware and software	Once				
Systems	7 times	Information access regime	7 times		
The administrative licensing service hall	8 times	Disclosure channels	26 times		
Website	7 times				
Archives (bureau)	3 times				
Chief executive mailbox	Twice				
Chief executive telephone number	Once				
Chief executive day	Once				
Library	Once				
Tanggu television station	Once				
Hotline telephone calls	Once				
One-stop service	Once				
OGI regulation	6 times			Contents construction	12 times
OGI Guide	3 times				
OGI Catalog	Once				
Disclosure upon applications	Once				
Special topic research	Once				
Service consciousness	4 times	Disclosure effects	9 times		
The public(common people)	3 times				
Inspection	Twice				

infrastructure has been well developed at present, we abandoned the “information infrastructure” as one of the first-tier indicators and kept other 5 first-level indicators.

At last, 5 first-tier indicators were extracted for evaluating information openness of local governments, namely, 1) building of information access regime, 2) institutional support for government information disclosure, 3) contents construction, 4) channels of government information disclosure, and 5) effects of information disclosure. The second-tier indicators with high frequency in Table 3 and the concepts in Table 4 were combined as 30 second-tier indicators of our evaluation system, which are respectively subsumed under 5 first-tier indicators. Sixty-nine specific concepts are assigned as third-tier indicators under appropriate second-tier indicators. The indicators at three levels are shown in Table 5.





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Table 5 Evaluation system for information openness of local governments

First-tier indicators	Second-tier indicators (weight)	Third-tier indicators (weight)	Combined weight	Explanatory notes of the third-tier indicators		
Building of information access regime (0.2593)	Management systems (0.2449)	Work shift system (0.1357)	0.0086			
		Registration and using system(0.2265)	0.0144			
		Information updating and maintaining system (0.3666)	0.0233			
	Supervision and safeguards system (0.2500)	Information releasing and coordinating system (0.2265)	0.0144			
		Press spokesman system (0.0447)	0.0028			
		Accountability system (0.3333)	0.0216			
	Examinations for secrecy of government information to be disclosed (0.1189)	Public review system (0.3333)	0.0216			
		Inspection system (0.3333)	0.0216			
		Principles (0.5417)	0.0167		Investigation at different confidentiality levels; Responsibility on the investigator; Publicity after investigation; Safe and convenient utilization	
	Information disclosure upon application (0.1638)	Procedures (0.1589)	Records (0.2993)	0.0049		
			Formulate the application form for government information (0.2620)	0.0092	Written records of confidentiality investigation	
		Formulate the fee collection system for application(0.1846)	Formulate the <i>Notice for Open Government Information</i> (0.0986)	0.01113		
			Formulate the <i>Non-disclosure Notice</i> (0.1055)	0.0008		Within the application scope; Ensuring timely provision
Formulate the <i>Notice for Non-existing Government Information</i> (0.1055)		Formulate the <i>Notice for Information Beyond the Authority</i> (0.0363)	0.0042		Information beyond the scope of disclosure	
		Formulate the <i>Notice for Correction of Applications for Access to Government Information</i> (0.0363)	0.0045		No such government information	
		Formulate the <i>Partial Disclosure Notice</i> (0.1098)	0.0015		Information beyond the scope of responsibility of the agency	
Formulate the <i>Notice for Correcting the Results of Application</i> (0.0253)	Formulate the <i>Notice for Correction of Applications for Access to Government Information</i> (0.0363)	0.0015		The contents of application not clear		
	Formulate the <i>Notice for Correcting the Results of Application</i> (0.0253)	0.0047		Part of government information not to be disclosed		
			0.0011	The applicant having evidence to demonstrate that the information provided by the authority is not accurate		

(Continued)

First-tier indicators	Second-tier indicators (weight)	Third-tier indicators (weight)	Combined weight	Explanatory notes of the third-tier indicators
		Formulate the <i>Notice for Not Having the Right to Correct Government Information</i> (0.0363)	0.0015	The authority having no right to correct the record of the requested information
	Voluntary disclosure (0.1741)	Scope of disclosure (0.3333)	0.0151	
		Methods of disclosure (0.3333)	0.0151	
		Inspection system (0.3333)	0.0151	
	Annual report system (0.0965)	Standards for annual report compilation (0.0633)	0.0158	
		Examination system for annual report compilation (0.3667)	0.0092	
Institutional support for government information disclosure (0.1849)	Leaders in charge of information disclosure (0.2444)		0.0452	Leadership level and status
	Departments in charge of information disclosure (0.2267)		0.0419	Ranks and status of the departments in charge
	Responsible agencies for information disclosure (0.2435)		0.0450	
	Staff for information disclosure (0.1906)	Number (0.0654)	0.0023	Whether to be able to meet the requirements
		Professional level (0.5885)	0.0207	Familiarity with the work
		Duties (0.3461)	0.0122	Full-time or part-time
	Training for information disclosure service (0.1109)	Person-time of training every year (0.1000)	0.0021	
		Level of training content (0.9000)	0.0185	
Contents construction (0.2152)	Contents of information disclosure (0.5593)	Index (0.1448)	0.0174	
		Catalog (0.2368)	0.0285	
		Fulltext (0.2368)	0.0285	
		Database (0.2368)	0.0285	
		Website building (0.1448)	0.0174	



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First-tier indicators	Second-tier indicators (weight)	Third-tier indicators (weight)	Combined weight	Explanatory notes of the third-tier indicators
	Updating and maintenance of information (0.4407)	Novelty (0.2865)	0.0272	
		Accuracy (0.4269)	0.0405	
		Comprehensiveness (0.2865)	0.0272	
Channels of government information disclosure (0.1533)	Center for administrative licensing service (0.1150)	Staff (0.4949)	0.0087	Is a person responsible for information openness?
		Equipment (0.2525)	0.0045	
		Fund (0.2525)	0.0045	Is the fund sufficient?
	Government Websites (0.1573)	Special column for government information disclosure (0.2525)	0.0061	
		Organization of open information (0.2525)	0.0061	Voluntary disclosure or disclosure upon applications
		Retrieval of open information (0.4949)	0.0119	
	Archives (0.0821)	Setting up public reading rooms (0.2184)	0.0027	
		Special personnel for information openness (0.1496)	0.0019	Is a person responsible for information disclosure?
		Funds (0.4010)	0.0050	Is fund sufficient?
	Libraries (0.0623)	Facilities for information access (0.2448)	0.0031	Do agencies provide equipment such as computers and display screen?
		Setting up public reading rooms (0.2045)	0.0020	
		Special personnel for information openness (0.1496)	0.0014	Is a person responsible for information disclosure?
	Newspapers, TV magazines, TV radio, bulletin board, electronic screens, etc. (0.3723)	Funds (0.4010)	0.0038	Is fund sufficient?
		Facilities for information access (0.2448)	0.0023	Do the agencies provide equipment such as computers and display screen?
		Press conference (0.0734)	0.0113	

(Continued)

First-tier indicators	Second-tier indicators (weight)	Third-tier indicators (weight)	Combined weight	Explanatory notes of the third-tier indicators
Effect of information disclosure (0.1788)	Hotline telephone calls (0.0777) Service mailbox (0.0573)	Contents of information disclosed (0.2976)	0.0119	Do they comply with the provisions of the <i>OGI Regulations</i> : accuracy, comprehensiveness, authentic?
			0.0088	
			0.0127	
	Public review (0.2392)	Effects of information disclosure (0.2976) Channels of information disclosure (0.2024)	0.0127	Is the disclosure timely? Are the channels diversified, effective and convenient to access information? Is system standard and put in place?
			0.0087	
			0.0087	
	Public satisfaction with the disclosure on the agency's initiative (0.2946)	Systems for information disclosure (0.2024) Contents disclosed (0.2517) Service of the staff (0.0937)	0.0133	Do contents comply with the needs of the public? Degree of satisfaction at the service attitude and quality? Do they provide timely services for the public? Is each business flow convenient and easy to operate? Are the facilities easy to operate? Is the charge reasonable?
			0.0049	
			0.0086	
			0.0133	
Effects of information disclosure upon applications (0.2650)	Service facilities (0.0757) Charge (0.1646) Acceptance rate of applications (0.4269) Reply rate (0.4269) Charge (0.1462)	0.0040	Do they collect fees according to the regulations?	
		0.0087		
		0.0202		
Administrative reconsideration and litigation (0.2012)	Acceptance rate of administrative reconsideration and litigation (0.3333) Reply rate of administrative reconsideration and litigation (0.3333) Error correction rate of administrative reconsideration and litigation (0.3333)	0.0202		
		0.0202		
		0.0069		
			0.0120	
			0.0120	
			0.0120	



4.4 Determination of the weight of indicators

Delphi Method and AHP Method were adopted to determine the weight of each indicator.

Firstly, a survey questionnaire was constructed based on 5-point Likert scale in assessing the degree of importance of each indicator at each level.

Secondly, the questionnaires were e-mailed to 35 experts in the field of open government and 30 valid questionnaires were collected. It is very difficult to get feedback from these experts because of their busy work schedule. And it is more difficult to get iterative feedbacks to reach a relatively consistent opinion. It is even more difficult to hold a colloquium because these experts live in different provinces or cities. As far as we know, a few researchers would adopt a false method to solve such problems. They would utilize the average of the importance points of all the experts as the final points for Satty's AHP analysis. It is incorrect to calculate the average of the ordinal variable and their result often cannot pass the consistency test.

Therefore, we need a reasonable method to solve these problems. At first, we changed each questionnaire result into Satty's 1-9 scale. Then we adopted Yahhp Software to transform the data of each Satty's scale into weight data for all the first-tier and second-tier indicators. It is very easy to use Yaahp software to make weight transformation and the consistency of the input data can be tested automatically. The result shows that only 27 feedback results passed the CI test and the weight values from 27 experts did not scatter too much. Then the average of the 27 weights was calculated as the final weight of each indicator, as shown in Table 5. The weight of the second-tier indicators was calculated with the same method. As for the third-tier indicators, we invited 8 experts to help assign the weight for each indicator respectively and then the average was calculated.

Thirdly, the combined weight of every third-tier indicator (operating indicator) was calculated by multiplying its weight with the weight of the second-tier indicator and the weight of the first-tier indicator which it belongs to. The final score of a local government on information disclosure is a weighted sum of the values of all the first-tier indicators, and the final value of every first-tier indicator for a local government is a weighted sum of the values of all the second-tier indicators. The evaluation system with each indicator weight is shown in Table 5.

5 Conclusions

Scientific evaluation on openness in government affairs is significant in making the government more transparent. In order to develop a scientific evaluation indicator system for information openness of local governments, content analysis and case



study were adopted to obtain indicators at three levels, and Delphi Method and AHP Method were employed to determine the weight of each indicator. At last, an evaluation indicator system with 5 first-tier indicators, 30 second-tier indicators and 69 third-tier indicators was constructed. After determining the indicator weight, we interviewed some experts so as to triangulate our evaluation indicator system. The results show that the indicator selection and indicator weight are basically consistent with the experts' judgments.

In order to evaluate the effect of the *OGI Regulations* and promote its implementation in China, a wide range of evaluations on all the local governments need to be conducted. This will be a great challenge for an academic research because accessing a great deal of inner data of local governments needs authority approval, personnel, time and financial support. Therefore, we did not conduct a wide range of evaluation. In order to test the usability of our evaluation system, we conducted a test by choosing the government of Tianjin Binhai New Area and 3 lower-level local governments of its subordinate administrative districts as evaluation targets. The data for our evaluation are mainly from public information online, such as annual reports, regulations and rules, notices and government website contents. The results show that although we tried to make every lower-level indicator as objective and operational as possible, we met a problem that it is difficult to get information for all the indicators from public information sources. The data for some indicators such as "examination system on information disclosure", "accountability system" and the third-tier indicators under "public appraisal" cannot be found from public sources. We had to interview some officials in charge of open government information work for these indicators. Another problem is that the data for the second-tier indicator "public satisfaction of voluntary disclosure" cannot be obtained directly from public information or interviews. It is necessary to conduct another questionnaire survey on the public of the evaluated districts. The third problem is the determination of indicator weight. Strict Delphi Method is very costly and often limited by time and funds.

Despite above difficulties, our evaluation indicator system has desired usability. It will be more effective if operated by a consulting firm or government agency that has enough authority or fund to get enough information. Moreover, the indicators of this evaluation system will also help us to understand the present situations of information openness of local governments in China.

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